



E.S. 36A









1985

# THE AMATEUR ENTOMOLOGISTS' SOCIETY

## TO ALL INTERESTED IN INSECTS

This Society is intended for amateur collectors and all others interested in any order of insect life in any part of the world, and sets out particularly to assist the less advanced student and the beginner in every possible way.

Its objects are :-

- A. To bring collectors into touch with one another and to promote correspondence and meetings between those with kindred tastes.
- B. To broaden the general collector's outlook on entomology, and encourage a deeper interest in the hobby.
- C. To publish a regular scientific but non-technical journal, nine times a year, known as THE ENTOMOLOGISTS' BULLETIN its aims being:-
  - (1) To provide articles dealing with the collecting, breeding, preserving and identification of insects.
  - (2) To publish members' observations on insect habits, variation and structure.
  - (3) To publish members' queries on any entomological topic, for other members to answer and discuss.
  - (4) To enable members to freely voice their views on the many debatable entomological subjects which occur from time to time.
  - (5) To publish members' lists of wants and exchanges.
  - (6) To publish articles dealing with the occurrence of insects in various districts month by month.
  - (7) To publish articles by specialists in various branches of entomology on the chief items of interest in their subject.
  - (8) To publish reports on any experiments performed recently or otherwise which may be of general interest.
  - (9) To review recent entomological literature, and the standard books of reference.
  - (10) To provide a list of members and their addresses to enable those in the same district to arrange meetings, etc.
  - (11) To encourage the collection by members of records of the presence and movement of migrant insects with the object of enlarging biological knowledge of the behaviour and probable causes of these migrations (In co-operation with the South-Eastern Union of Scientific Societies).
  - (12) To attempt to find the effect of varying atmospheric conditions on the date of appearance, abundance, etc. of selected common Lepidoptera, by means of observations collected by members.

Practically all the articles are contributed by the members themselves.

The minimum annual subscription is 3/6 in Great Britain, the Colonies and U.S.A., and 5/- abroad.

BEGINNERS ARE ESPECIALLY WELCOME

Specimen of the Society's journal sent on receipt of a stamp

WILL YOU AND YOUR COLLECTING FRIENDS JOIN US?

Further details willingly given by the Hon. Secretaries:-

B.A. COOPER,  
61, Okehampton Road,  
London, N.W.10.

C.H. VEALE,  
8, Hurst Road,  
Bexley, Kent.



**THE JOURNAL**  
**OF THE**  
**ENTOMOLOGICAL EXCHANGE**  
**AND**  
**CORRESPONDENCE CLUB**

**VOLUME ONE**

**1935-1936**

**REPRINTED 1985**

**THE AMATEUR ENTOMOLOGISTS' SOCIETY**

This Volume is issued in celebration of  
**THE GOLDEN JUBILEE**  
of  
**THE AMATEUR ENTOMOLOGISTS' SOCIETY**  
**1935-1985**

Founded in August 1935  
by  
L. R. TESCH  
as the  
ENTOMOLOGICAL EXCHANGE  
and  
CORRESPONDENCE CLUB  
being known as the  
**AES**  
as from January 1937.

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1938

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## INTRODUCTION

By Brian O C Gardiner

Compared to the size of moth resulting, some of the smallest eggs amongst the Lepidoptera are laid by certain of the Hepialidae. When our founder, the late L. R. Tesch "laid the egg," half a century ago, he little realised that today his offspring would be one of the largest and most vigorous Entomological Societies in the world.

Starting with only half-a-dozen members it had grown to 20 within six months and 44 by the end of its first year, at which period our founder was forced by circumstances to relinquish his part in its affairs. The editorship and general running of the Society was then ably taken up by the late Beowulf Cooper and A. N. Brangham, assisted by a small band of equally keen and enthusiastic helpers. Cooper and Brangham were close friends who had already had editorial experience while at school together a few years earlier when they had founded and edited *Biology*, the official organ of the University College School Biological Society. They were in fact looking for a fresh challenge and in taking over the management and editing of the then embryo Society they both found it and succeeded.

As with so many other organisations the Amateur Entomologists' Society started life under another name and did not become the "AES" until after a referendum during the second year of existence of its "first instar," which was known as "The Entomological Exchange and Correspondence Club." The first number of the Journal of this club consisted of 4 duplicated quarto pages and was quoted as No. 1. Under the title of "Journal" or of "Bulletin" this numbering system has been continued consecutively ever since. Although there is no mention of a volume number in the first 13 issues which constitute the first volume, it was so called when in November 1937 a portion of it, edited and with additions, was reprinted as a separate publication. Issue No 14, however, was clearly labelled as Vol. 2.

This volume 1, then, was issued in 13 parts over a period of 18 months. After the first number the size of paper used was foolscap (328 X 202 mm) and most issues were reproduced on one side only of the paper. Numbers 2-9 were done by the use of a "Jellypad" (Fig. 1) and the rest by the use of a duplicator.

We do not know how many of the earlier numbers were produced. It must have been less than 50, this being the limit possible by jellypad before illegibility sets in. It is in fact stated that only 6 numbers of the first issue were sent out, although a few more may have been run off. Since membership did not attain the jellypad limit until after the first year, the earlier numbers run off may only have been a dozen or two. Some of these were used for advertising shots and certainly lost. We have only located 3 copies of volume 1 and none of these is quite complete. It is possible that the circulation and numbers printed were mentioned in the minutes of the early meetings held, but all these were lost during the war. This in itself is a good reason for reprinting this rare early material, for there is much in it concerning the personalities and doings of our founder members.

Our first volume contains much interesting matter both of historical and entomological interest and the Society has had numerous requests to reprint. Thanks to the legacy of the late C. O. Hammond it is now possible to undertake the reprinting of this first volume in its entirety.

Some of the articles and points raised in this volume make fascinating reading and a close study of them shows that while some problems and queries have been solved, others refuse to go away and controversies not only still arise, but have continued to rumble steadily on for the half century of our Society's existence. A problem that has been solved is the query over whether hawkmoths are attracted to light. They are. A perpetual problem, more worrying today than it was in 1935 when we had but a handful of members, is the non-payment of subscriptions when due and the failure of those seeking replies from officers of the Society to enclose a stamped addressed envelope. In those early days it seems our founder and other helpers personally subsidised this item. First mooted in

1935, the question of whether or not the Red Admiral hibernates, continues after the passage of fifty years to be argued in the pages of our Bulletin. It is also interesting to note that the first mention of the catching of moths at UV light is made. I feel that this early reference has been overlooked (perhaps due to the very small circulation and membership in 1935) for it was not until after the war that the real effectiveness of UV came to be appreciated, although it was in use in the USA before then. The definitive history of the development of the UV light-trap remains to be written.

It will be argued that when old material is reprinted it should be done in facsimile. In this case it was not possible. The original quality is not good enough. Words and sometimes whole sentences have to be deciphered. The availability of 3 copies has meant this is done correctly, for the 'blanks' are not all in the same place. While we must also admire and congratulate the original typist(s), the layout is both variable and very tight single spacing, often running very close to the margins, head and tail. In addition the Society's copy in particular (which is the most complete) has been heavily annotated, in both ink and pencil, with crossings out and additions, and all this would show all too well on a facsimile. The poor quality of reproduction on some pages is such that this too would not really be acceptable to modern readers who will want to read and enjoy the text, not be confronted by a cryptogram to decipher.

The reprint before you now, therefore, has been retyped onto a computer. The paragraph indents have been standardised and the right-hand margins justified. The layout of the original has been retained, as has all the original underlining, which, to us now, may appear to have been applied rather at whim. Certainly it was only used sometimes for scientific names. The vagaries of cutting stencils may explain this. The typeface used is Prestige Elite 12 pitch which gives the impression of the original typewriter(s) and the illustrations (crude by today's standards) are mostly facsimile and these give some of the flavour of the original.

We have already stated that the original size was foolscap. It was decided after obtaining estimates that the cost of this would be quite unjustifiable and the format out of character with all the Society's publications over the past 40 years. The present standard format of A5 has therefore been chosen. The actual computer printout was onto A4, which was then reproduced in facsimile and reduced to A5 by our excellent printers. While this has resulted in a smaller print size than we usually use it is much easier to read than some of the original text. The original pagination has of course been retained and in a few cases this has resulted in the line and paragraph separation having to be squeezed up a bit in order to fit the often very full page of foolscap onto the smaller A4 and still leave a margin. This re-arrangement does, however, result in the last few words on a page often ending in the middle of a line, since the remainder of the sentence will start at the top of the next page as it did originally.

We reproduce (Fig. 1) a photograph of a jellypad, similar to that used for the earlier issues and a facsimile of page 1 of the very first issue (Fig. 2). As already explained the poor reproduction of this is due to the lack of clarity in the original.

For the convenience of readers an index has been compiled which was not of course present in the original and is considerably more extensive than the contents list which was given to the partial reprint of 1937. For ease of reference new page numbers have been added at the side of the pages. Readers should note that all the original pagination is centred, but when present, is sometimes at the top and sometimes at the bottom of the page.



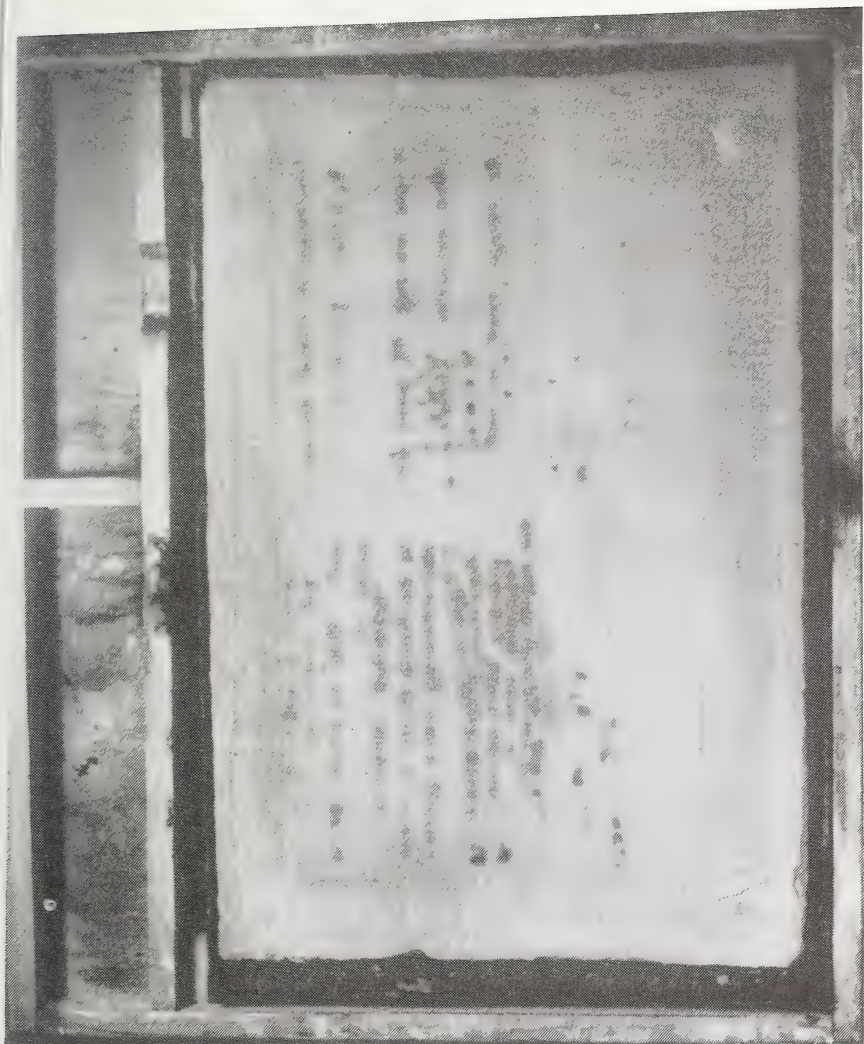


Fig. 1. A “jellypad”, also known as a hectograph, similar to that used to produce the early issues. The typed page was rolled onto the jelly which absorbed the blue carbon type ink used and this impression was then transferred back on to clean paper when these were laid and rolled over the jelly. As copies were made the impressions became weaker and more indistinct. To produce the next page the jelly was cleaned by wiping with a cloth dipped in warm water.

THE JOURNAL OF THE  
ENTOMOLOGICAL EXCHANGE AND CORRESPONDENCE CLUB

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No. 1.

August 1935.

This being the number with which our Club makes its bow, it is perhaps advisable to state briefly the reasons for its inception and to give some report of progress.

All recreative activities have some kind of central organization which caters for their adherents, but so far as I know, entomology, in its amateur collecting status, has not. Collectors have to rely on chance acquaintance or advertisement for exchanges; those wanting partners in the hunt have no means of finding them; beginners want advice from older hands, but do not know any; breeding, particularly, has problems which are not touched upon in text-books. In short, our hobby seems to want co-ordinating (taking care that it does not become too technical, or "high-brow") so that the scope of all amateur collectors can be extended and assistance given to beginners.

Broadly speaking, therefore, I suggested compiling a Journal once monthly from April to October, and twice during the winter period. This is to contain members' contributions on anything entomological for the interest and information of all; lists of insects for exchange and wanted; problems or queries they may have; a list of members to enable them to get into touch with each other.

Initial subscription is nil. (This feature probably makes our Club unique!) A half-yearly account will be circulated, showing expenses incurred in producing the Journal. Members are asked to share these, and it is estimated that provision we can get some thirty members as a minimum, the cost should not exceed about three shilling per annum each.

It was admittedly very late in the season to launch an enterprise of this kind, but as the alternative was to wait till the spring of 1936, I decided to try out the idea, and in July inserted a small advertisement in Exchange & Mart. This brought nine replies, which considering that entomologists are as a drop in the ocean of humanity, I thought good enough to warrant further efforts. I am accordingly putting similar notices in a few local papers, and getting leaflets printed - a few of which I enclose with this number - which I am hoping to get distributed by professional breeders, naturalist firms, etc. with their own price lists, and in reciprocity would send their lists out to our members with the Journal from time to time. It is for this reason

Fig. 2. Facsimile reproduction of the first issue. This example well shows how indistinct and faint some of the words were, although in all fairness to the originals, some of this is now due to fading with the passage of time.



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that members may receive outside lists from me from time to time. This appeared to me to be the surest way of bringing our Club to the notice of those most likely to be interested.

I am also asking Secretaries of natural history societies, when I can get in touch with them, to place a leaflet on their notice boards. and I would suggest that members could also assist in this direction by using the enclosed copies in some similar way.

Many of our Public Schools run their own societies, and I propose getting into communication with some of these, with a like object in view.

One of our members, with connections abroad, has very kindly offered to have notices inserted in a paper with an international clientele, and I am therefore arranging for this to be done.

By these means, I hope gradually to increase our numbers, and I need hardly say that I shall be very grateful for any suggestions or help in this direction that members can offer.

Many large enterprises have sprung from the smallest possible beginnings, and while I do not wish to count the proverbial unhatched chickens, I hope that members will not be discouraged by the present minute size of our little band of "bug-men". Both time and opportunity have so far been very brief in which to make our Club known, and naturally it will be some time before any overseas members can be added to our list.

I am making several more copies of this Journal than are actually needed, so that one may be sent to each new enquirer, and I hope that what I have written will be sufficient to convince applicants of the advantages of membership.

In closing the "editorial" may I again say that I shall be only too glad of any suggestions, or criticisms, which may assist in extending our organisation, which I wish to emphasise is open to those interested in all orders of insect life anywhere in the world.

L.R.Tesch, Hon.Secretary.

#### NOTES.

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It is not to be expected that this number can contain very much under this heading, but the following have come to hand:

The Common Elder has, at night, been found to attract moths in considerable numbers, even when adjacent honeysuckle and gardens have been comparatively untenanted. those who use an acetylene lamp might bear this in mind.

The Lulworth Skipper is reported to be unusually frequent in the Weymouth district, while the Clouded Yellow, occasionally moderately common there, has not been seen. A scarcity of Clifton and Chalk Hill Blues from the same locality is reported.



Near Bridgewater, Privet Hawk and Eyed Hawk larvae have been found.

One member was fortunate in finding four Pine Hawks a month or so ago, a red letter day indeed. Incidentally, he is very anxious to track down the Purple Emperor, and would be grateful for any news of majesty's present, or reputed, headquarters.

Graylings are very abundant on the hills behind Cranleigh, Surrey, flying round the many gravel and sand pits there.

#### Q U E R I E S.

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(When replying to these, members are asked to refer to each query by its given number. This will reduce their own writing and facilitate reference generally.)

1. Is there any means of distinguishing, microscopically or otherwise, between fertile and infertile ova? This applies more especially to those with a fairly opaque shell.
2. A small brood of Privet Hawk larvae have behaved rather disastrously. All with the exception of one, died off in various stages, and had the appearance of having been partly eaten. The sole survivor fed up with amazing rapidity and pupated several weeks ahead of schedule. One is tempted to suspect cannibalism, but this is not a characteristic of the species. Comment invited.
3. Have members found that despite every care with regard to ventilation, precaution against overcrowding, cleanliness, etc. their larvae die off, and frequently just before the final moult? Is mortality a necessary evil in one's cages? What percentage do members expect to rear to the perfect insect from any given number of ova?
4. A member asks whether it is essential to have one's cages in a glass or other closed house, to prevent attacks from minute ichneumons, or whether, if the cages are in the open with only overhead weather protection, these pests will have an adverse effect on results?
5. Light traps. Any information as to members' experience with these is asked for, and if they have proved in any way a success, a rough description of the apparatus used.

## EXCHANGE AND WANTED.

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(members are asked to communicate direct with each other in this connection).

Mr. B. V. Fox, Beam Wireless Station, North Petherton, Bridgewater, Somerset, has Lappet (*Quercifolia*) larvae for sale or exchange.

Mr. Glanfield, Devoncote, Darlington Road, Hartburn, Stockton on Tees, Durham, has a number of tropical butterflies for exchange, mostly from North America and Japan.

## LIST OF MEMBERS.

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Mr. A. Glanfield, Devoncote, Darlington Road, Hartburn, Stockton-on-Tees, Durham.

Mr. F. Goode, Welford, 275 Eastern Avenue, Ilford, Essex.

Mr. B. V. Fox, Beam Wireless Station, North Petherton, Bridgewater, Somerset.

Mr. A. Capener, "The Limit" Osmington, Weymouth, Dorset.

Mr. W. Wood, Ayton, Berwickshire.

(Also a few others whose names are not included, as  
- probably owing to absence on holiday - no  
definite information received as to whether they  
wish to join the Club.)



THE JOURNAL OF THE  
ENTOMOLOGICAL EXCHANGE & CORRESPONDENCE CLUB.

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It is requested that all material intended for the Journal may be sent to the undersigned, The Grove, Losely Park, Guildford, By the 20th. of each month.

No. 2.

September 1935.

There is an African saying "Better a live snail than a spent arrow" and to some extent this applies to our Club. Though slowly, we are at least moving forward, and it is gratifying to note that we have now several more members than we had a few weeks ago.

I have no doubt that there do exist a large number of collecting enthusiasts who would be only too glad to join us if they could but be located, and in this connection may I ask for the assistance of all members by letting me know

(a) any towns in Great Britain, on the Continent or anywhere in the world which they know to possess a Natural History Museum;

(b) any Schools which have either a Natural History Society, or any followers of the net.

I will undertake to write to the Curators or Secretaries and endeavour to get one or more Club leaflets posted up on their notice boards. I am circularising a number of schools with this object in view, but it is, of course, a bow drawn at a venture.

A notice of the Club is now exhibited in the entomological section of the Natural History Museum in London, another has been sent to Liverpool, and others as far afield as Australia and Honolulu.

It would also be greatly appreciated if members would very kindly enclose a Club leaflet when they have any communications with others on entomological matters. I can supply more of these if required.

While I rather incline to the opinion that amateur entomology has declined in the past twenty years, owing to the competition of other and more exciting forms of recreation, - particularly as regards the younger generation - surely with the whole world as our hunting ground and the whole range of insect life as our boundary, we may hope to net at least one hundred specimens of the genus "Collector insectorum" as a sound foundation for wider operations. At the same time, we are up against one main obstacle, and it is a typically entomological one, namely - finding them! I know I may rely on the cooperation of members in this connection and having once touched on this point, I will labour it no more.

I would, however, mention that it has been brought to my notice that some collectors may hesitate to join the Club owing to uncertainty, on the present basis, as to how much they will be called upon to pay as their share of the expenses. There is something to be said for this point of view, and while it is equally difficult for me to forecast the cost of producing this Journal, I do not want this to be an obstacle to enrolment.

I am therefore guaranteeing that, for the first year of its existence at least, membership of the Club shall not cost more than three shillings (abroad, four shillings). If, by increasing our numbers, I am able to do it for less, members will receive the benefit. If, on the other hand, I am heavily under-estimating, well, at the end of the years working, I should naturally have to re-consider matters a bit.

L. R. Tesch,  
Hon. Secretary.

NOTES.

In another part of this Journal I have referred to the possible decline in collecting in recent years, and, though it may be imagination, there also seems to be, in comparison with some twenty-five years ago, a scarcity of insects. I have noticed this particularly at indoor light, and also on the rare occasions when I have tried sugar. In former days it was quite usual to have a dozen or more moths flying about one's room, with reinforcements continually arriving, but now, even on what appears to be ideal nights, they are few and far between. Even *Menthastri* at light and *Libatrix* at sugar have been absent this year, so far as my experience has gone. I visited tree after tree and drew blank, whereas I used to be pretty sure of finding something on most trees, even if only *Polyodon* or *Pronuba*. Perhaps my hunting grounds in past years were more fortunately situated.

I know that bats are to some extent responsible for poor results at light, as I have had several insects with wings shorn obliquely at the ends, indicating a narrow squeak in the darkness. Also, daylight saving has struck a blow at this section of our activities. In the old days we used to do well between ten and midnight, but now one has to remain abroad until the small hours, not always a practicable proposition.

Even allowing for these causes, however, there seems to be an unexplained absence of insects, a fact which more than one member has already commented upon.

A member has given a very useful hint as to setting, i. e. that excellent strips for this purpose can be made from old roll film negatives, provided these are first soaked in hot soda water and afterwards washed and dried. Their great advantage lies in their transparency, especially when used for setting very small insects. My correspondent mentions that there is a slight tendency occasionally for these strips to remove a slight sprinkling of scales. In small pieces they are excellent for mounting small coleoptera, diptera, etc.

The larvae of *C-album* (Comma) have been found on hazel, and in captivity will eat sawfly, neither of which food-plants are usually associated with this species. A large number of *B. trifolii* larvae (Grass Eggar) were found near Formby, Lancs, but suffered heavy mortality in the breeding cages. The writer had exactly the same experience when trying to breed this species. Are they particularly prone to die when all appears to be going well?

A member lost several larvae owing to his breeding cage standing under the edge of a roof, which directed rainwater into it and drowned them. This is a point worth bearing in mind in these days of sudden thunderstorms. He also mentions loss of larvae in sleeves through the agency of birds. It is difficult to know how to combat this, other than by wire netting or some such expedient. Rain storms and high winds are also noted as causing casualties among sleeved larvae out of doors.

The following article is contributed by a member on the subject of keeping pupae through the winter:-

"A very satisfactory puparium can be made as follows:- Procure a rough wooden box, about twelve inches square, with a lid, and in the bottom make a number of holes for drainage. Screw, upright at each end of the back (inside) two strips of wood, and another strip joining them across the back at the top. These should be so arranged that the lid of the box, when shut up against them, will fit closely. Nail on the bottom four blocks of wood to act as legs, then obtain a cane of such a length that when bent over and the ends fastened in each corner of the box at the front,



it will reach to the same height as the erection at the back. Two cross pieces of wood will also be required to act as supports. Cover the whole framework with lino, leaving the door free to open. The bottom should be covered with a few inches of cocoanut fibre and sand. This should be occasionally sprayed with water. A puparium of this kind need not be kept in doors. Some twigs should be placed inside for the insects to hang on to while drying their wings.

Pupae can be forced to emerge before their proper time in the following way:

Obtain a large flower pot, and cover the hole in the bottom with moss, placing on the top of this a few inches of cocoanut fibre and sand. Place the pupae on the fibre and cover with moss. A piece of Leno should then be tied over the top and the pot placed in a saucer of water. This can then be put in a warm place. The level of the water in the saucer must be kept constant and care taken that the pupa is not subjected to too much heat. The insect should emerge in about a month's time. In the case of hawk moths, the pupa may be subjected to a heat of 70 degrees for a fortnight, at the end of which time the insect should emerge. Forcing of pupae, however, is not recommended as, except in the case of Hawk moths, colours are frequently duller than if left to emerge naturally.

Another member gives the following re winter pupae:- Place them in a flat tobacco tin in the coldest place that can be found, with just a sprinkling of dry sand on the tin.

He recommends the same procedure for pupae during the warmer months of the year, except that the sand on the tin should be kept just damp.

The following very interesting notes come from South Devon.

The most interesting entomological event of the past summer in this district has been the wonderful emigration of Silver Y moths from Start Point of August 4th. The moths commenced to fly past the lighthouse shortly after midnight "like a fairly heavy snowstorm." The Channel hereabouts is 100 miles wide and it seems a wonderful thing that any butterflies or small moths should be able to cross it safely. When sea fishing in Teignmouth Bay butterflies were frequently seen making for the land, but these may, of course, have only been blown off our coast accidentally. A Deaths Head Hawk, however, that settled on a Brixham trawler on night in June last must have been an immigrant.

On the whole, butterflies have been scarce here (South Devon) this summer, the exception being the Grayling, which has been very numerous on Dartmoor. Nearly a dozen Commas were seen outside a wood near Chudleigh on a warm April day, but the cold spell afterwards evidently killed most of the larvae of the first brood, as only two have been seen since. The westward spread of the Comma has been very remarkable; a few years ago, they were almost unknown in Devon.

Some of the larger Fritillaries have been fairly numerous, and the Privet Hawk has been conspicuous among the larger moths.

A member mentions having seen (he does not say he was fortunate enough to take it!) a Wood White near Denham on Sept. 15. He also suffered from cannibalism among his brood of Garden Tigers, a round dozen out of thirty-three paying the penalty of this characteristic of their kind.

In No. 1 issue we mentioned the scarcity of Clouded Yellows in the Weymouth district. Another member mentions that some time ago this year he saw over a dozen in one field there. That illustrates one of the great attractions of our hobby - one never knows what may be round the corner!

# QUERIES. ---

- No. 6. Several larvae of various species spun up and pupated apparently quite satisfactorily, but on the cocoons being opened long after their normal time of emergence, the insects were found to be dead, either completely or partly formed, and more or less covered with a kind of mould or fungoid growth. The cocoon itself was perfect and quite dry, so that this would not appear to be due to excessive dampness. Can any members suggest a possible cause?
- " 7. Probably one of the most difficult aspects of breeding is that of persuading newly hatched larvae to commence feeding, have any members found any particular form of cage or treatment efficacious in this emergency?
- " 8. A member noticed a quantity of Wild Convolvulus or Field Bindweed was being consistently eaten, but could find nothing to account for it. He wonders if there is any possibility that this might have been due to the larvae of the Convolvulus Hawk? This has occurred on rare occasions in the Southern counties in the past, and if this should be another instance, this member should certainly stake out a claim on that particular part of the hedgrow!

# ANSWERS. ---

To Query No. 4. A member suggests that mortality among larvae is probably high, even in the wild state, and that ichneumons are not greatly to be feared for insects in captivity. He makes the useful point that it is well to cover perforated zinc with butter muslin as a precaution against these pests. Another member, of very long experience, gives it as his opinion that to a great extent the causes of larval mortality are mysteries beyond our ken, and it may perhaps be some consolation to us to know that even after very many years of entomological experience, this member still loses larvae for no apparent cause! He lays down one firm rule, however, "no handling larvae by the hands". This, he says, is the cause of many casualties.

The above seems to answer in part Query No. 4 also.

To Query No. 5. I have received from this same member a very complete and careful drawing of a light trap with which he has been very successful. I hope to be able to reproduce this, with his permission, for our next number, and should like to take this opportunity of thanking him for the great trouble he has taken in helping us on this point.

# EXCHANGE. ---

Mr. W. E. Teschmaker, Ringmore, Teignmouth has some well grown larvae of T. Polyphemus, a large North American moth, which he would exchange for larvae of any Hawk or other interesting species.

Mr. A. Capener, The Limit, Osmington, Weymouth, collects stamps and cigarette cards. This is mentioned in case it may be of interest to any others who may do likewise.

Members are referred to this section in No. 1 issue, for other exchanges and wants, which, in the absence of advice to the contrary, are presumed still to be as then stated.



LIST OF MEMBERS.  

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Mr. A. Glanfield, Devoncote, Darlington Road, Hartburn, Stockton-on-Tees, Durham.

" F. Goode, Welford, 275 Eastern Avenue, Ilford, Essex.

" B. V. Fox, Beam Wireless Station, North Petherton, Bridgewater, Somerset.

" W. Wood, Ayton, Berwickshire.

" A. Capener, "The Limit" Osmington, Weymouth, Dorset.

" K. Clarke, 7 Stanley Avenue, Wembley, Middlesex.

" G. Newland, 20, Gledhow Gardens, South Kensington, S. W. 5.

" T. C. Puttick, 62, Aldershot Road, Guildford.

" D. S. Greig, Medwyn, 65, Cavendish Drive, Rock Ferry, Cheshire.

" W. E. Teschmaker, Ringmore, Teignmouth, Devon.

" M. A. Rollason, Valetta, Ladys Bay, Clevedon, Somerset.

NOTE. Dealer's list enclosed. It would be greatly appreciated if, in the event of any members communicating with dealers, they would very kindly mention the Club, so that the dealers concerned may feel that we are reciprocating to some extent for their distribution of our leaflets.

Nov. 3.

October 1935.

The time of the year is rapidly approaching when collectors, like many of their charges, think about hibernating, and in consequence, there has been a general slowing up of entomological activities. At the same time it is with considerable pleasure that I am able to point to a further increase in our membership, and at the time of "going to press" we are eighteen strong. Considering that we have only been in existence as a Club for about ten weeks or so, and that hunting for collectors is about as laborious and unproductive a job as digging for pupae, I feel that this is quite a satisfactory result to date.

I have various enquiries on foot, and hope to add to our total before the end of the year. Our leaflets are gradually being dispersed about the country and to places abroad, and I have every hope that, little by little, they will assist in building up our membership.

It has been put up to me that I may have difficulty in getting sufficient "copy" from members owing to the novelty of the idea of seeing themselves in print, so to speak, and the feeling that literary excellence is called for. Please let me remove the cause of any such hesitation.

In the first place, no names are inserted in the Journal, except in the "Exchange and Wanted" section, where they are obviously essential. Secondly, I am only too willing and anxious to receive members' contributions in pencil, ink, type, on any old paper that happens to be handy, and so long as they are legible, I will do the rest.

Anything is welcome, descriptions of breeding cages, odd habits of insects noticed, unusual varieties seen or taken, brief accounts of members present breeding establishments; in fact, anything in any way appertaining to insect life, and (may I stress this?) not only lepidoptera, but any other insects at all -- yes, even fleas! It is my sincere hope that the Club may prove of equal interest to those specialising in hymenoptera, coleoptera, diptera and the other orders, just as it appears to be welcomed by the lepidopterists.

In closing this month's "editorial", may I remind members that it is not proposed to issue another Journal until about the end of the year. If sufficient materials are forthcoming, an additional one will be issued in February, after which our monthly issue will be resumed for the coming season.

L R Tesch,  
Hon. Secretary.

NOTES.

The initial burden of my song in this section is that pest of the collector - MITES. We know of various ways of getting rid of these more or less effectually, but we do not know exactly how they originate - at least I don't. In my own case, for example. Some twelve years ago I brought a large number of insects of all kinds from West Africa. Many of these I mounted, singly, in small card boxes about two inches square and half an inch deep. These boxes I made myself by

scoring and bending the sides (not cutting them except at the ends) covering them round with thick passepartout paper. The insect was then placed inside on a tiny piece of cork, roofed in with a piece of glass cut to size, and the whole again surrounded with thick paper. For twelve years these remained absolutely intact. The boxes are as airtight now as they were when made and there is not the slightest sign of wear - but mites have made their appearance inside. Whence and how, after twelve years?

As our Club is definitely intended to be of assistance to young beginners, and to those whose experience of entomology is, perhaps, not very mature, it may not be out of place if from time to time, mention is made in this section of matter which to the old hands are second nature. I would deal for a moment with the sending of larvae by post.

If these be sent in a tin container, it is essential that a few small holes be bored in it, not only for ventilation for the inmates, but also to prevent the foodplant inside from causing a condensation of moisture on the metal. In the course of a day and a night on a journey, this can develop into quite sizeable drops of water which might even drown very small larvae, and in any event, would do them no good. Holes are advisable in any kind of box, wooden, cardboard or otherwise, but they are absolutely necessary in the case of a tin box, particularly if this is somewhat small.

Another point which may be of interest to the younger of our members is the question of setting. A uniform system adds enormously to the appearance and value of a collection. it is a matter of opinion whether insects be set absolutely flat, or on a bevelled board, with a resultant downward slope to the wings. The point is that they should all be set in the same way, whichever is adopted. A good general rule is that the hind margin of the fore wings should form a right angle with the centre line of the body. (The writer blushes furiously here, as has sinned grievously against this rule!)

Black pins are perhaps preferable, as being least noticeable in the cabinet, and a size should be chosen which, when the pins are inserted in the insect (perpendicularly through the centre of the thorax, incidentally) gives a pleasing appearance and does not look either too large or small in proportion to the insect. About half an inch of pin above the thorax is ample. In the case of Coleoptera, these are pinned through the right wing case, and not in the thorax, in order to prevent breakage of the latter and the pushing outwards of the wing cases as a result.

One thing is absolutely essential when setting any insect, i.e. complete suppleness of the limbs. If they are in the least stiff, damage is almost certain to result when the needle is brought into play.

This brings me to the question of relaxing. There are many opinions as to what makes a good relaxing medium, but having tried many, I have found the following to be most efficient:-

Procure a tin box about three inches deep, with a tightly fitting lid. Half fill this with peat, or peat moss. Pour in boiling water (to kill mites, etc.) until the whole is saturated. Allow the surface water to drain in and then place a few layers of blotting paper on the top. Lay the insects on this and close the lid. A few drops of carbolic acid may be sprinkled on the blotting paper as an additional precaution against mould, but this is not really necessary and might conduce to loss of colour in the insects. About



twenty-four hours in this box will generally relax any but the largest insects completely. These will require rather longer. From time to time the box should be re-wetted with a little boiling water; this will prevent development of mould.

If peat is not procurable, probably sawdust would serve as well, the writer has tried sand and ordinary earth, but these do not seem to give as good results as the peat.

I have received a very useful hint re larvae which normally breed close to the shore. Mortality in the breeding cages where any of these are feeding has been found to be greatly decreased by very finely spraying the food-plant with salt water, thus imitating to some extent the natural effect of proximity to the sea in the wild state.

A *Convolvulus Hawk* was taken near Weymouth in the last week of September. it was in good condition, and it would be interesting to know whether it had bred in this country. This is also of interest in view of the remarks regarding this insect in last months Journal, which mentioned possible evidence of this occurring not so far from that locality.

I am glad to be able to include in this number a sketch of a Moth Light Trap which a member of long experience has found very satisfactory, and regarding which he very kindly sends the notes appended to the sketch.

#### QUERIES.

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No. 9 Information is wanted as to the best method of keeping hibernating butterflies through the winter. If any members have tried this, details would be appreciated.

#### ANSWERS.

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No. 5 Light Trap. See Notes and sketch in this number.

#### EXCHANGE & WANTED.

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(Members are referred to previous entries under this heading which are presumably still in force. The Hon. Secretary would like to point out that this section can also be used to advertise any equipment, apparatus, cabinets, etc. which members may have for disposal or require second-hand.)

Mr. D. S. Greig, Medwyn, 65 Cavendish Drive, Rock Ferry, Cheshire, has *L. rubi* (Fox Moth) larvae, now hibernating, for exchange. He is also interested in stamps, but only British Colonials. He will be glad to hear from any members on these.

Mr. A. N. Brangham, 9 Litchfield Way, Hampstead Garden Suburb, London N.W.11 is particularly interested in British Ants and is very anxious to get in touch with other members on this subject, with a view to ascertaining the latest information as to new species and localities.

Mr. G. H. Hodgson, Lindale, 38 St. Ann's Drive, St. Michael's Lane, Leeds, 4 is interested in Lepidoptera from a photographic standpoint.

He has for exchange:-

Pupae of *S. carpini* (Emperor)

Larvae of (hibernating) of *B.cullunae* (Northern Eggar)

He specially wants:-

Pupae of *A. villica* (Cream Spot Tiger)

" " *C. hera* (Jersey Tiger)

" " *P. machaon* (Swallow Tail)

" " *V. io* (Peacock)

" " any Hawk moths except *S. Populi* (Poplar)

Will any members who are interested in Californian Lepidoptera, or insects of various orders from the Hawaiian Islands communicate with Mr. T.M.Blackman, McKinley Apartments, 1079 Jay Street, Honolulu, Hawaiian Territory, U.S.A. he will be pleased to exchange these for British Colonial postage stamps.

#### LIST OF MEMBERS.

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(In order to save time and space, it is proposed to insert in each Journal only names and addresses of those members who have joined since the preceding issue. A complete list will be forwarded to any member on application to the Hon. Secretary.)

Mr. F. J. Clarke, Goudhurst, Chart Lane, Dorking.

" H. G. Yates, 57 Sherman Road, Reading.

Messrs. H. W. Head & Co., Entomologists, Burniston Scarborough, Yorks.

Mr. V. G. Cavill, 4 Lawford St. West St. Bristol.

" B. E. Hodgson, "Lindale", 38 St. Ann's Drive, St. Michaels Lane, Leeds, 4.

" A. N. Brangham, 9 Litchfield Way, Hampstead Garden Suburb, London N. W. 11.

" B. A. Cooper, 61 Okehampton Road, Brondesbury Park, London, N. W. 10.

Total number to date = = 18.

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Notes on Moth Light Trap.

The size of trap is not very material, but the slot and arrangement of glass panels is important. Trap illustrated was 12" high and 15" wide. The following points should be carefully observed:-

Line of glass at points A and B should be lineable horizontally. Insect strikes either pane moving automatically to gap (about 1 1/2 in. wide) then reaches interior, and if trying to get out is prevented by the angle formed by the lower pane and the small upright one dropped from it. Glass slides in and out between small strips of wood nailed on the sides. Top glass slides out first, and then others can follow.

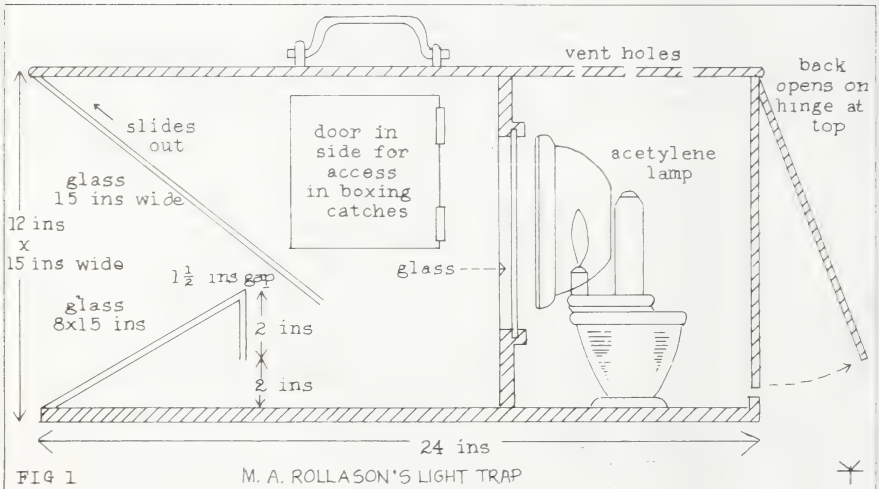
Box painted white inside and a dark colour outside.

When glasses were packed flat, the box also served as a useful case for carrying sundry collecting impedimenta.

A useful adjunct in this connection is the handle on the top.

Such a trap has been found to give best results when used in a real country district where no other lights were in evidence.

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THE JOURNAL  
of the  
ENTOMOLOGICAL EXCHANGE AND CORRESPONDENCE  
CLUB

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No. 4.

December 1935.

Partly owing to pressure of work (not an uncommon experience at the end of the year with those whose lives are spent in the prosaic ways of an office) and partly owing to dearth of "copy", this number of our Journal will be considerably shorter than its predecessors, but since our last issue a few points have been raised, which will probably be of interest to members.

As is only to be expected at this season increase in membership is slow, and I have only two additions to our lists. I have, however, had a few enquiries from abroad, to which I have replied, but there has not yet been time to receive answers. In the course of my correspondence, the fact seems to emerge that entomology, as a general rule, has a national, rather than an international appeal, by which I mean that collectors seem to be interested in insects of their own country to the exclusion of all others, and with few exceptions have no particular desire to exchange outside their national boundaries.

Members may not agree with me, but to my mind this tends to rob our hobby of a considerable amount of its artistic interest, at all events, as the insects - of all orders - of the tropical and subtropical countries are undoubtedly among the most curious, as well as the most beautiful of all things created.

This leads to another matter; the question of a "basis of exchange." There are definitely two points of view on this subject. On the one hand is the feeling that a commercial standard, if one may use the term, should govern exchange between collectors, whereby an intrinsic value, so far as possible, is set on each insect, and the equivalent value expected in return.

On the other hand there is the desire that collectors should regard their hobby as outside any form of commercialism, and that on receipt of published lists of "wants", fellow members of a club such as ours who have these specimens as a surplus should pass them on to the enquirers, irrespective of what, if anything, they may receive in return.

This latter aspect, it is assumed, naturally excludes all real rarities and those prizes ardently desired by every collector one day to fall to his net, which nobody would expect to receive merely for the asking.

On such a thorny subject I do not venture any opinion, but it would form an interesting subject for debate and members views are solicited.

In my search for new members, I have come across an unexpected obstacle, which I fancy is of fairly modern origin. I refer to the "anti-killing bias" among many who, up to that point, are keenly interested in various branches of natural life and history. This seems to be more especially the case in communities, such as schools and societies, rather than with individuals, and I have heard of one or two schools where collecting of any kind is distinctly frowned upon if it could entail the taking of life in any form.

While one cannot but respect the principles prompting this attitude, it is perhaps possible that those adopting it do not realise that an eternal struggle between insect and man is always in progress, that man is barely holding his own in the fight, and in many cases is being seriously defeated.

One has only to think of the tse-tse fly, the mosquito, the termite, the driver ant, the locust, and many others, to imagine what would be the state of affairs if all forms of death but a natural one were to be withheld from them!

In our own country too, we have the plagues of wire-worm, of the "leather-jacket", the blue-bottle, the gnats, not to mention the stripping of orchards and various trees by ravenous armies of caterpillars.

In these circumstances, therefore, one may be pardoned for feeling that the few specimens of each insect in one's cabinet can hardly represent any glaring instance of trifling with Nature!

At the same time, all true collectors will deplore the practice occasionally met with of taking and killing everything seen. There is no excuse whatever for this, as it is perfectly easy to decide whether a captured insect is required or not while it is still in the net, or at all events, before the bottle has had time to do more than slightly stupify it.

A suggestion has been made that valuable information could be obtained if members would take particular notes of any immigrant species which they may encounter from time to time, with details as to date, locality, frequency, and so forth, so that these could be collated and sent to those scientific societies which specialise in that branch of work. I shall be very glad to pass on any of this information which members may care to send me.

May I, in closing, express the hope that I may receive plenty of "copy" for our next number, which I hope to issue in February, and finally, I wish to take this opportunity of wishing all members a Very Happy Christmas and good hunting in the coming year.

L.R.Tesch.

#### NOTES.

There is very little under this heading but it occurred to me that the following extract from a member's letter might be of interest, and - with his permission - I give it verbatim. It certainly shews an unusual keenness in what must have been decidedly adverse conditions.

"...With a few million others, I visited the Continent in the interests of King and Country, and in the trenches at La Bassee I saw a Swallow-Tail in front of the trench we occupied. I could not resist giving chase, and caught it with my tin hat. After the Armistice, came the march to the frontier. We went to a village in Germany called Luftelberg, about ten miles from Bonn. There was a good bit of forest country and it proved to be a veritable Paradise for entomologists. My field dressing went west to make a butterfly net. I had access to tools, and soon had a few setting boards and a couple of good store boxes made. I

was chaffed a bit at the start, but when they saw neat rows of set specimens and the beautiful colours of them, they agreed there was something in the hobby after all. In fact, four of them were smitten with the disease, and another four field dressings went west. They all took boxes of specimens home".

There may be other instances of "bug-hunting" in the face of the enemy, but I have not heard of them. One assumes that the episode of the Swallow Tail did not occur during a moment of what we used to call "some activity on the Western Front"!

### Q U E R I E S

No. 10. A member asks whether the presence of light, both ordinary daylight and ultraviolet light, is known to have any effect on the developement of insects and whether any noticeable variations are produced as the result of breeding them under conditions varying from intense light to almost complete darkness.

### EXCHANGE & WANTED.

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Mr. A. Kennedy, 152 Lee Farm Rd. Kirkstall, Leeds 5, has the following duplicates and will be pleased to send such as he has to any members requiring them:-

Grayling (semele); Clouded yellow (edusa); Dark Green Fritillary (aglaia), Dark Sword Grass (ypsilon); Angle Shades (meticulosa); Lesser Broad Border (ianthina); Rosy rustic (micacea); Autumnal (autumnata); Dark Chestnut (ligula), Clay (lythargyia); Sallow (fulvago); Dark Brocade (adusta); Burnished Brass (chrysitis); Brick (circellaris), Map Winged Swift (fusconebulosa); Knot Grass (rumicis).

He requires:-

Any hawk moths other than Poplar.

Any Skipper Butterflies.

Peacock, Brimstone, Large Tortoiseshell, Orange Tip and

Painted Lady. Any Blues other than Common Blue.

Any moths of the Notodontidae other than Puss and Bufftip.

### L I S T O F M E M B E R S .

The following have joined since our last issue:-

Mr. A. Kennedy, 152 Lee Farm Rd. Kirkstall, Leeds, 5.

Mr. C. W. Henderson, Braemar, Deane St. off Knightthorpe Rd.

Loughborough, Leicestershire.

Total to date = = 20

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THE JOURNAL  
of the  
ENTOMOLOGICAL EXCHANGE AND CORRESPONDENCE  
CLUB

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No. 5.

February 1936.

Though it will be some time yet before our activities recommence in earnest, we are at least well into a new year, and, from a Club standpoint, an important one, as the progress made during the coming season will determine the extent to which our efforts are useful and necessary to, and appreciated by collectors. By this year, then, we stand or fall.

From my experience in obtaining recruits, I know how difficult a task it is to find them, And I fully appreciate that for individual members it is probably even more so. At the same time, may I appeal to all to endeavour to bring one new member in during the coming season, and thus help to double our present membership? At the risk of being redundant, I would again mention that the Club is intended not only for those who actually collect specimens of dead insects (though it is primarily intended to assist collectors generally), but also to form a centre whereby all interested in insect life of every kind can get together and exchange ideas, etc.

I mention this in view of the prejudice against killing which I have found to exist and which may have acted in some cases as a deterrent to enquirers.

It has been represented to me that in the case of their Journal contributions, some members may prefer that their names should be appended. Naturally, if this be the case, I should be delighted to publish them, and therefore may I ask that when sending items for inclusion, members would very kindly indicate whether they wish their names to be inserted as the contributors?

The suggestion has been made by a member that when issuing lists of members, a note should be placed against each stating in what particular branch of entomology he is interested, thus making it possible for others with similar leanings to pick out kindred spirits, so to speak. This appears very sound, and, in the absence of any notification from members that they do not wish to be so "labelled", I will do this, as far as I am able, when publishing future lists. In the meantime, If members would care to amplify any information they may already have given me on this point, I shall be glad to receive their comments.

In the last number, the thorny question of a basis of exchange was touched on. So far only one comment has come to hand, and that is definitely in favour of some "commercial system", with the published lists of well known dealers as the basis, which is, I believe, the method generally adopted by stamp enthusiasts in effecting exchanges, using the published catalogues in the same way.

I have been asked to publish the laws regarding the transmission by post of living creatures, dangerous and otherwise, for the information of members who may wish to obtain specimens of "noxious insects", etc. from abroad.

The Post Office Guide states as follows:-

"It is prohibited to send by post living creatures with the exception of bees, leeches and silkworms so packed as to avoid all risk of injury to officers of the

"Post Office or to other packets". Personal enquiry has failed to elicit anything in addition thereto.

It is perhaps a little difficult to understand why bees, leeches and silkworms are privileged to travel by H.M. postal Service, and, say, beetles, grasshoppers and bluebottles should be barred! The prohibition would also appear to extend to caterpillars, but unless we credit the P.O. officials with universal entomological knowledge, I think we are fairly safe in sheltering under the protective authority of the silkworm and his fellow travellers for the despatch of any larvae we may have to send.

The same regulations obtain, more or less, in the U.S.A. and probably also in most other countries, while in some cases the sending of dead specimens out of the country is attended by Governmental restrictions.

If sending packets of insects abroad, it is always advisable to place a notice on the outside to the effect that it contains "nothing of any commercial value, and Insects for scientific purpose only".

In order that I may be able to issue the March number in good time, would all members be so kind as to let me have any contributions not later than the 7th. of that month?

I am anxious to get as much as I can for the March Journal, as spare copies of this will be sent to all enquiring regarding the Club, and the more interesting it can be made, the greater the chance of roping in new recruits. Thus, my appeal to members now is a twofold one - members and copy, with PLEASE in capital letters!

L. R. Tesch.

Hon. Secretary.

#### Q U E R I E S .

No. 11. Can members suggest a suitable covering for outdoor breeding cages of considerable size wherein insects may be induced to lay their eggs, and which is proof against the effects of weather? All forms of muslin and similar material give way in a short time and wire gauze is a somewhat expensive luxury. Has any member tried treating strong tiffany or curtain net with some water-proofing solution with satisfactory results?

#### A N S W E R S .

No. 10. Effects of light on larvae, and pupae. it is stated that too much light is liable to cause pupae to dry up, though it is believed that the Aegeridae (Clearwings) will only emerge from the pupa during sunlight. The same member writes that in the case of vinula (Puss Moth) several larvae which he kept in a dark position died before reaching maturity, whereas others of the same species, kept in a sunny position, pupated and emerged normally. (N.B. The writer of these notes had exactly the same experience with vinula, a whole brood dying of without apparent cause, and in this case also, the breeding cages were in a very shady position.)

The above mentioned member gives it as his opinion that, assuming food to be present, the absence or otherwise of light has little effect on larvae, but this, of course, Applies to ordinary daylight. No information is forthcoming regarding the effects of artificial light, ultra-violet rays, etc.

No. 9. Hibernating insects. The following reply has come to hand on this subject:-

"I always hibernate moths by putting them into a large breeding cage, open on all sides to the weather by means of perforated zinc. The bottom of the box is about four inches below the surface of the surrounding earth, and made also of perforated zinc with earth inside made up to the ground level. In this earth are growing plants of groundsel, chickweed, various grasses, dock, myosotis, foxglove and other low plants. A few dead leaves are left lying in one corner for the moths to hide in. The lid is half glass and half perforated zinc and the whole is left in a shady part of the garden. On calm nights, the moths fly about and now and again I put a dab of treacle on the side, which they consume. They also appear to take honey from the groundsel and chickweed blossoms. This has only been once used for butterflies, i.e. two V. urticae which remained quite still on the side till early April.

It would probably be advisable to keep such boxes always in a shady place, otherwise the imagoes might stop hibernation too early in the year at bright spells. This type of box I find very useful for hibernating larvae."

#### NOTES.

The following novel and very interesting item has been contributed by Mr. A. Capener:-

"I recently read an article on making "Wing Prints" of Lepidoptera, and tried the method out with surprisingly good results. All that is needed is some wax paper cut up into suitable sizes. Remove the four wings carefully and arrange in a spread position on a piece of the wax paper. Carefully place another piece on the top and cover with a piece of fairly hard smooth paper. The operation is done on a piece of glass or smooth tile.

With the bowl of a spoon rub the whole surface thoroughly, taking care not to move the wings. This causes the wings to stick to the wax paper. Separate the papers and with forceps remove the wing membrane. The scales will adhere to the paper, and there should be a perfect wing-print - one piece showing the upper and the other the under side. These can be mounted in loose-leaf books. Names and other information can be added and an extensive collection can be made in quite a small space. This method is recommended to anyone collecting abroad, wishing to get specimens named.

The prints should be mounted with the scales in contact with the mounting surface, as the surface of the scales in contact with the wing membrane has a somewhat iridescent appearance."

The above certainly hold great possibilities, especially as the samples sent with the above were perfect in every way. It would be interesting to hear from any members who may experiment on the above lines as to their results.

(See Addendum for further notes on the above)

#### EXCHANGES.

I have no notices under this head, but have heard from the following, independently of Club activities, and members may care to communicate direct:-

Mr. G. H. Bennett, Asst. Controller, B. B. & C. I. Railway (M.G.) Rewar, Punjab, India will exchange butterflies



from Assam, Burma, and the Himalayas, also beetles and other insects, for British insects. He is able to procure some of the larger specimens of Indian moths (*Attacus Atlas*, *Attacus Edwardsie*, *Antherae Roilley*, etc.). He asks that any insects sent may be sent unset and that some notice be placed on the package as referred to earlier in this number.

#### CORRECTION.

Journal No. 3. page 4. The address of Mr. T. Blackman, of Hawaii, should read 1079 Young Street (not "Jay" St.) but any letters which may be on the way to him incorrectly addressed will in all probability reach him safely as one at least has already done so.

#### LIST OF MEMBERS.

No additions since last issue.

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#### ADDENDUM

Since writing the foregoing, the following additional notes have been recieved from Mr. Capener regarding the "Wing-Prints":-

The finer the grade of wax-paper used, the better the results, as the outside of the wing naturally shows through the paper.

The best plan to be followed in mounting would be a card index system, of an approximate size of 8" X 5", folded to 5" x 1/2 with 1" overlap. Both sides of the wings could then be mounted on the same sheet, a fairly thick white paper being used, and details of name, foodplant, locality, etc. written on the outside.

Specimens to be treated in this way should be free from attacks of mites, as portions of scales are frequently missing.

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THE JOURNAL OF THE  
ENTOMOLOGICAL EXCHANGE AND CORRESPONDENCE CLUB.  
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No. 6.

March 1936.

When we look at the calender and see March 10th. we begin to feel that our period of hibernation is nearly at an end and that it is time both we, and our insects, sat up and took notice of things in general. There are not lacking signs that this is already the case, and one evidence is an increase in our membership, bringing us now to a total of 24 - and I hope that this may be added to before this number is actually posted.

I am including with this issue of the Journal a complete list of names and adresses of members, with, so far as I have been informed of them, their individual interests within the general framework of entomology. This, as one member very wisely suggested, will give opportunity for those with the same leanings to "get together" if I may use the term.

Any further information on this point which may come to hand will be included in our next number.

I am very glad to notice that we are beginning to include members interested in some of the lesser known orders of insects; the wider we can make our scope in this way, the greater, I think, will be the service that we can render to our adherents as a whole.

As several members have indicated that they would like their contributions to the Journal to appear under their own names instead of anonymously, I am doing this in future with all copy sent in, except, of course, when I am definitely asked not to do so.

In view of the fact that I have somewhat more material than usual for this Journal, I will end this "editorial" and proceed at once with the more interesting and informative matter. I should like, however, to express my thanks to those members who have so kindly sent me the wherewithal to make this number a little "fatter" than some of its predecessors.

L.R.Tesch.  
Hon. Secretary.

NOTES.

On the subject of a basis of exchange, a further comment has come to hand. This member feels that as there are so many variations of shade and markings in individual species, which in some cases might render any given specimen unique, it is not possible to affix a finite cash value to any insect. He quotes the case of postage stamps, where similar vagaries of shade, etc. occur, and in these instances a value is placed on them according to the measure of their rarity, but this is not, speaking generally, the case with insects. He further mentions that in Roxburghshire, Scotland, there is a peculiar green shade of the common *Polia chi*, which does not occur elsewhere. in view of this wide divergence from type, this member feels that a "commercial basis" is impossible, and that it should rest with those exchanging to see that a generous recompense is given for insects received.

There is undoubtedly a good deal to be said for this point of view, but the "snag" appears to be that whereas the standard stamp catalogues do attach different values to varying

shades and markings in stamps, standard entomological lists (with the exception of certain well known and more or less constant varieties and aberrations) do not, so that, for example, the green shaded Chi mentioned above, would probably be priced at the same figure as the normal type, and therefore exchangeable on a like basis.

The following is contributed by Mr. W. E. Teschemaker, and is copied as received:-

I am sure that all our members will agree that our hard-working Editor requires as much assistance as possible in the form of "copy" and I am therefore continuing my recent notes on migration in the South West.

"The Western Morning News" recorded several instances of the occurrence of the Large Tortoiseshell in the Scilly isles and West Cornwall in late August and early September, so there must have been immigration in the early summer of this rare species. Whence comes the muscular energy that must be needed for such a flight? I once saw two Wall butterflies fighting, and, by my watch, they whirled round and round and charged one another for three minutes without a moments intermission. Three minutes is the duration of a boxing bout, but no two boxers ever yet were able to fight at full speed for the whole of that period.

Another fine species was unusually plentiful in the first two weeks of September - the Red Admiral. I frequently saw as many as half a dozen in my garden at one time; yet two correspondents state that they had not seen one, in the same county. They must have been "patchy". I recently purchased for a few pence a very interesting little book on American Moths, in which it is claimed that there is no great difficulty in capturing moths by a snatch of the hand and without damaging them. By way of testing this statement, I cautiously approached some Admirals that were sunning themselves on the flowers of a Buddleia. Remembering the not infrequent occasions when I had missed Admirals with the net, I was not sanguine of success, but I actually succeeded in catching four, and did not miss one. My method was to advance the hand very slowly to a point just below the flower on which the insect was resting. and then to bring the hand up with a semi-circular motion. I "set" one, and was equally surprised to find that it was quite undamaged. Several Red Admirals were reported as being seen flying at Princetown in the middle of Dartmoor in the first few days of January. These specimens must have survived three weeks' frost in one of the bleakest places in Devon! This seems to throw doubt on the accepted theory that this country is a little too cold for the successful hibernation of this fine species.

I always imagined that habitual migration was a rare event, but I recently came across the statement that more than 15 of our Butterflies and more than 50 of our Moths are normally migratory, and that the greatest wanderer of all our moths is the Death's Head, which has been found in Iceland and even in Greenland!

One of these I had was a very fine female and I kept it for a week or more, hoping that I should obtain a mate for it, or, at all events, hear its "squeak". I used to throw it up in a large room, but it would only make short flights, and seemed to prefer scrambling about one's coat. in fact, it was a friendly, domesticated sort of creature and absolutely refused to "squeak"! Can anyone tell me if it is only males that "squeak"?



(Editorial note.) In connection with the foregoing, I should like to mention that the Death's Head seems to be a world traveller, as I took a fine specimen in the heart of a semi-equatorial forest in West Africa. Personally speaking, I have never heard the "squeak" said to be emitted by this insect. The one to which I refer may have squeaked, but I was too intent in getting him into the bottle to listen for it!

Touching the matter of taking Red Admirals with the hand, I have on one or two occasions accomplished this feat, but found an even easier insect to take in this unorthodox manner was C-album (Comma). Two years ago, these were moderately plentiful in some gardens here with a plenitude of over-ripe pears. Whether these induced a state of intoxication or no, I cannot say, but I took the whole of my series (six in number) by gently extending the hand behind the insect, as it was feeding on a pear, and gripping it by the thorax between finger and thumb. Many others I could have taken in the same way, but naturally took no more than I actually wanted. L. R. T.

Mr. Walker, of Torquay, has sent me a copy of a paper read by him before the South Western Natural History Society, on the lepidoptera of his district, and has very kindly intimated that I may make use of it in our Journal. Unfortunately my time and resources do not permit me to reproduce it in full, but I am sure members will find the following extracts of great interest:-

Among the butterflies the Pierids are, of course, the commonest. *P. rapae* and *P. brassicae* are often triple brooded. A rather curious thing I have noticed during the last few years is that the House Sparrow has taken to capturing large numbers of *P. brassicae*, but he confines his energies to the May broods only. They take this insect whilst flying, then alight and rub the wings of the butterfly off on the ground. But I have never yet managed to see one of them eat the body. The rubbing process must reduce the body to little more than an empty skin. I wonder whether they feed their young ones on them. If this is so, it seems rather remarkable to me, as I know fowls in a run will reject both the larvae and the bodies of Brassicae, and I have never seen an insect eating bird attempt to catch one.

*L. sinapis*, the Wood White, is fairly plentiful, but very local, occurring in wooded country. It appears in May, and I have occasionally taken it in August.

*P. aegeria*, the Speckled Wood, is fairly common, but not so plentiful as it was twenty years ago. Considering it has sometimes as many as four broods a year, one would think it would be well able to hold its own. I think it becomes scarcer because the land is more intensely cultivated than it used to be. Hedges are better trimmed, ditches are kept clearer, and the corners of ploughed fields are not skipped and neglected as they used to be. All this decreases the number of breeding places.

I once saw *V. antiopa* (Camberwell Beauty) on our Sea Front. I watched it for some time after it left the road when it flew up and down the Rock Walk visiting the flowers of Valerian. This was in May 1900, and the insect was no doubt an immigrant.

*P. cardui*, the Painted Lady, is very eccentric in its appearances. My brother and I once had the rare pleasure of watching a very large immigration of this insect into this country. We had been working a heath about five miles inland, not many feet above sea level. Just about midday our attention was attracted by a vast number of butterflies flying overhead at about twenty or thirty feet above the ground. They were coming inland from a south-easterly direction and heading north-west.

The flight lasted for about half an hour, and the air overhead in either direction as far as we could see was full of butterflies. Very few dropped out, but we managed to take one or two, when they turned out to be *P. cardui*. Several years later, when comparing notes from my diary with those of the secretary of my Society, we found he, too, had been watching the same flight, although he was about ten miles further up the coast.

Mr. Walker also relates the capture of several *L. boetica* (Long Tailed Blue) in 1926, and mentions the following incident as a typical example of "beginner's luck":

Once, when collecting with a friend, I came across a boy with a butterfly net, and asked him what he had caught. He showed us his box, and in it were three freshly taken specimens of *L. minima* (Small Blue). This was a great surprise to us, as we had collected for years over the same ground and had never seen it before.

Among other butterflies mentioned by Mr. Walker as occurring in the Torquay area are:-

*A. Euphrosyne* (Pearl-bordered Fritillary) and *E. selene* (Small Pearl Bordered Fritillary) local near woods and heaths.

*A. paphia* (Silver Washed) and *A. adippe* (High Brown Fritillary) often flying together.

*A. Agalaia* (Dark Green Fritillary) somewhat scarce.

*M. artemis* (Greasy Fritillary) very local.

*S. semele* (Grayling) common on limestone areas.

*P. megaera* (Wall) rather scarce.

*M. galatea* (Marbled White) very local, but occasionally abundant.

*V. polychlorus* (Large Tortoiseshell) not common but several webs of larvae taken from time to time.

*V. io* (Peacock) *atalanta* (Red Admiral) and *urticae* (Small Tortoiseshell) all common.

*C. edusa* (Clouded Yellow) and *C. hyale* (Pale Clouded Yellow) the former occurs most years but the latter only taken by Mr. Walker once since 1901.

*G. rhamni* (Brimstone) common.

*T. Betulae* (Brown Hairstreak) rare; *T. quercus* (Purple Hairstreak) common in oak woods. *T. rubi* (Green Hairstreak) common. *T. w-album* (White letter Hairstreak) once plentiful, but since 1908 very infrequent.

*L. aegon* (Silver Studded Blue) very local. *L. icarus* (Common Blue) very common.

*L. bellargus* (Adonis Blue) once fairly common, but lately died out. *L. argiolus* (Holly Blue) common.

Mr. Walker has many interesting things to say about the moths frequenting the area, and I propose to take further extracts from his paper dealing with these for a future issue of the Journal - a privilege which I, and I am sure our members, very greatly appreciate.

We now leave the homely heaths and lanes of Devonshire for a very different environment, to wit, the surf-washed shores of the Hawaiian Islands, two thousand miles out in mid-Pacific. From that land of perpetual sun and song come some very interesting notes from Mr. T. M. Blackman, an ardent entomologist for a great number of years and who has made many valuable contributions to entomological literature as the result of his researches into the ways of insects.

Speaking first of the Lepidoptera to be found in the Hawaiian Islands, Mr. Blackman says:-

"Here, in Hawaii, we have only ten species of butterflies, of which two only are originally Hawaiian, and these two are found nowhere else in the world. I list these two first.

*Pyrameis tamedinea*. Restricted to the mountain ranges. Very like the English "Red Admiral", but rather larger and the caterpillar feeds on a native shrub allied to the nettle.

*Lycaena blackburni*. A small species, dark blue above and bright green, without markings, below.

*Danaus plexippus*. "Black Veined Brown" of the British lists.

*Lampides boetica*. "Long Tailed Blue" of the British lists. A migrant, possibly accidentally imported, owing to the larva feeding inside pods of various peas and beans.

*Pieris rapae*. "Small White" of Britain. Common, and probably imported in vegetables.

*Pyrameis cardui*. "Painted Lady".

*Pyrameis virginiensis*. "American Painted Lady".

*Pyrameis atalanta*. "Red Admiral. The same as found in England. Occurs only in one part of the largest island of Hawaii, believed to have been imported there, and unlike its habits elsewhere, it remains only in one locality.

*Thecla agra* and *Thecla echion*. Both these insects were imported from Mexico for economic purposes to fight the spread of the lantana plant, on the flowers and seeds of which the larvae feed. It is interesting to note that owing to the absence of their native Mexican parasites, these two species have flourished in Hawaii, whereas in Mexico they are by no means common."

In referring to his collecting activities in England, several years ago, Mr. Blackman mentions much interesting work done on the sandhills around St. Annes, Lancashire and in the Witherslack district of Westmoreland, where he states many good local species were to be found, notable among them being *C. typhon* (var. *Rothlebi*) "Marsh Ringlet" on the peat mosses, and *L. aegon* "Silver Studded Blue," while a very restricted colony of *L. minima* "Small Blue" existed there at one time, but thanks to building development, etc. disappeared.

In larva searching in the Witherslack district, Mr. Blackman took several specimens of *Satellititia* "Satellite", *S. ocellatus* "Eyed Hawk, and *c. porcellus* "Small Elephant Hawk".

He refers to taking the pupae - or, rather, attempting to take them - of *Furcula* "Sallow Kitten" at Finchley, London, and mentions the extreme difficulty of discerning these pupae owing to the remarkable fidelity with which the cocoons resemble the bark of the tree on which they are made. He says:

"Once the moth has emerged and left a round hole with its edges bearing traces of whitish down, and still more after the cocoon has become partly broken away, it is not hard to detect, but while the pupa is within, and the cocoon of similar colour and surface, not projecting above the bark, I know of nothing in the whole realm of nature so hard to detect while looking straight at it as the cocoon of the Sallow Kitten."

After mentioning that the generally accepted theory that tropical and sub-tropical insects are all magnificent, both in colour and size is to a great extent false, as many of them are just as drab and insignificant as our own, Mr. Blackman gives some interesting comparisons between insects found in California with those with which we are familiar here.

Though American classifiers have slightly altered the scientific names of these insects, the following are quite frequently found in California:

The Small Copper; the Holly Blue; Small White; Painted Lady; Pearl Underwing; Dark Sword Grass and many others.



If we are ever fortunate enough to be able to collect around Hollywood, we shall apparently feel quite at home from an entomological standpoint, at all events!

Mr. Blackman puts us further in his debt by some very interesting comments on the subject of pins, which I give verbatim.

"Though black-enamelled pins look nice, they are soft and bend easily, as well as being thicker on account of the enamel, which is a drawback for small insects. By far the best pin, and much cheaper, are the ordinary silvered pins, after being washed in hot soapy water and after drying, immersed in sulphide of ammonium solution, as strong as obtainable, and then spread out on paper, exposed to the air, until dry. They then acquire a coating of silver sulphide which gives them a dark brown colour. They are much tougher and less easily bent, as well as being less noticeable in the cabinet, a great advantage to my mind. The only pins which are better than these are solid silver, far too expensive, but not liable to corrosion from greedy insects."

#### Q U E R I E S.

No. 12 An enquiry has been received as to the best method of killing green insects without destroying the colour.

(Note: A stab with a pen-nib in the thorax after dipping the nib in oxalic acid is very effective, but not easy to do in the case of small insects without damaging them somewhat. Chloroform is not very harmful to colour, but stiffens insects, and Green insects should never be relaxed if this can be avoided).

No. 13 Can any member say where Leaf Insects are to be obtained for breeding purposes?

#### E X C H A N G E S.

I have no specific notes under this heading, but Mr. G. Walsh, "Linthorpe", Stepney Drive, Scarborough, would be glad to exchange generally in Coleoptera, Hemiptera and Lepidoptera. Perhaps any members able to respond would kindly communicate with Mr. Walsh direct?

For the benefit of members recently joined, may I again mention that this section is at the disposal of members for the purpose of "advertising" not only surplus insects, and insects wanted, but also any apparatus, equipment, etc. which they may have for disposal, or seek to obtain.

#### L I S T   O F   M E M B E R S.

In addition to those included in the enclosed list, we welcome the following to the Club:-

Mr. G. B. Walsh, B.Sc. M.S.B.E., "Linthorpe, Stepney Drive, Scarborough.

Mr. A. Wise, 13, Third Avenue, Heworth, York.

Total to date . . = 24.

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THE ENTOMOLOGICAL EXCHANGE AND  
CORRESPONDENCE CLUB.

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List of Members.

- Mr. A. Glanfield, Devoncote, Darlington Rd., Hartburn, Stockton on Tees, Durham. (British and Foreign Lepidoptera.)
- Mr. F. Goode, Welford, 275 Eastern Avenue, Ilford, Essex.
- Mr. B. V. Fox, Beam Wireless Station, North Petherton, Bridgewater, Somerset. (Lepidoptera)
- Mr. W. Wood, Ayton, Berwickshire.
- Mr. A. Capener, The Limit, Osmington, nr. Weymouth. (Butterflies)
- Mr. K. Clarke, 7, Stanley Avenue, Wembley, Middlesex.
- Mr. G. Newland, 20 Gledhow Gardens, S. Kensington, London, S. W. 5.
- Mr. T. C. Puttick, 62 Aldershot Road, Guildford, Surrey.
- Mr. D. S. Greig, Medwyn, 65, Cavendish Drive, Rock Ferry, Cheshire.
- Mr. A. E. Teschmaker, Ringmore, Teignmouth, Devon.
- Mr. A. Rollason, Valetta, Ladye Bay, Clevedon, Somerset.
- Mr. F. J. Clarke, Gowdhurst, Chart Lane, Dorking, Surrey. (Butterflies)
- Mr. H. G. Yates, 37, Sherman Road, Reading, Berks.
- Messrs. H. Head & Co., Entomologists, Burniston, Scarborough, Yorks.
- Mr. V. G. Cavill, 4, Lawford St. Bristol.
- Mr. G. E. Hodgson, Lindale, 38 St. Anne's Drive, St. Michael's Lane, Leeds 4. (Lepidoptera and Insect photography).
- Mr. A. N. Brangham, 9 Litchfield Way, Hampstead Garden Suburb, London N. W. 10. (British Ants)
- Mr. B. A. Cooper, 61, Okehampton Road, Brondesbury Park, London, N. W. 10. (Lepidoptera and Hymenoptera)
- Mr. A. Kennedy, 152, Lea Farm Road, Kirkstall, Leeds 5. (Lepidoptera)
- Mr. C. W. Henderson, Braemar, Deane St. off Knightthorpe Road, Loughborough, Leicestershire. (Coleoptera)
- Mr. J. Walker, 7, Mount Hermon Rd. Windsor Road, Torquay, Devon. (British and Exotic Lepidoptera).
- Mr. A. Smith, 23, First Avenue, Heworth, Yorks. (Lepidoptera, Micros)
- Mr. G. B. Walsh, B.Sc. Linthorpe, Stepney Drive, Scarborough, Yorks. (Coleoptera, Lepidoptera, Hemiptera.)
- Mr. A. Wise, 13 Third Avenue, Heworth, York. (Lepidoptera)
- Mr. A. C. Hewitt, 9 Newbury Road, Higham Park, London, E. 4.

THE ENTOMOLOGICAL EXCHANGE AND CORRESPONDENCE  
CLUB.

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The Grove,  
Loseley Park,  
GUILDFORD, Surrey.

Mar. 28th. 1936,

Dear Fellow Members,

This is by way of a supplement to Journal No. 6, as now that the season has recommenced, I want to send out any information more or less "red-hot" instead of waiting for several weeks till the next Journal is issued.

1. the following should be added to our list of members, and are very heartily welcomed:-

Mr. A. C. Hewitt, 9 Newbury Road, Higham Park, London E. 4.

Mr. F. E. Briden. 40 Oldway Road, Paignton, Devon.

Mr. N. C. Pilleau, c/o Messrs. Talmey & Banks, High St. Billingshurst, Sussex.  
(Butterflies only)

Mr. G. V. Day, "Deysholme" Runcton Holme, King's Lynn, Norfolk, (Mainly lepidoptera, but interested in all insect life).

Mr. Kirichiro Kato, c/o Matsuo-Kogyo-Kaisha, Iwate-gun, Iwate-ken, Japan. (Will exchange all kind of insects).

2. Mr. N. C. Pilleau, address as above, has for disposal the following:-

1 Storebox 16" X 11".

1 Nine tier setting case with 26 boards all repapered. Slide door. Brass handle.

1 Twelve drawer cabinet.

He is asking 7 for the whole, but would be willing to dispose of seperately.

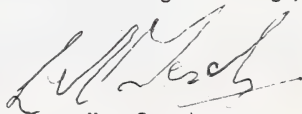
Will any members interested kindly communicate with Mr. Pilleau direct? I understand that he would be pleased to give any purchaser of the above such duplicate insects as he has available at the end of the season.

3. We now have one member in Japan. I am very anxious to establish connections in foreign countries, and should deem it a favour if any members interested in exotic insects would be good enough to write to Mr. Kato, if only to let him see that we are "live wires", as this may bring in other members in his locality.

4. Subscriptions. As my expenses in connection with the Club are now considerable, I should be most grateful if those members who have not already done so would be so kind as to send along their three shillings. My best thanks in anticipation. The subscription covers one year from date of joining the Club.

5. Contributions in the shape of notes, lists of duplicates, wants, problems, and anything else for the next Journal are earnestly solicited, and should be sent to me as soon as possible at the above address.

My greetings to all members and "good hunting",  
Yours sincerely,



Hon. Secretary.



THE JOURNAL  
of the  
ENTOMOLOGICAL EXCHANGE & CORRESPONDENCE  
CLUB

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No. 7.

April 1936

The Grove, Loseley Park,  
Guildford, Surrey.

The definite opening of our active season brings with it both encouragement and problems, at all events from an editorial point of view. The former is warranted by a material increase in our numbers - we are now 31 as against 24 when last going to press, - and the latter are the direct result of this.

I refer to the difficulty of producing sufficient copies of the Journal, not only for actual issues to members, but also to provide a sufficient reserve of extra copies for those joining in the future. It is obvious that the cost of printing is prohibitive, and the Roneo type of a duplicator is also too expensive, as each stencil sheet works out at about 6d. The ink is a costly item, also, to say nothing of the apparatus.

I naturally wish to be able to provide newly joined members with back numbers of the Journals if they ask for them, as several do, but the "jelly-pan" as this Hectograph method is irreverently termed, does not run to more than some 50 copies at the outside, and fairly faint ones at that. My time does not permit of frequent re-copying, and the subscription rate barely covers actual running expenses.

The present method is very far from satisfactory, but it is the best I know of at present.

Organisations such as ours which aspire to a magazine usually augment their income by advertisements, subscriptions from Vice-Presidents, and so forth (the only function, by the way, which I have ever known a V.P. called upon to perform), but though one may visualise these adornments for the future, they are obviously out of the question at the moment, and the problems of supplying a sufficiency of copies of the Journal within the framework (no, not of the League) of my personal time and resources is causing me severe thought.

This is in the nature of a wild S.O.S. and any suggestions as to an equally economically, while more efficient, means of producing our Journal will be gratefully welcomed.

I have again inserted a Club notice in the Exchange and Mart which has brought several replies, some of which, I am glad to see are from young beginners. It was for them that I really started the Club in the first place, and I hope that members knowing of any such will put me in touch with them.

I have also circularised several large schools, but I do not expect great things from this source, as most schools are somewhat jealous of any intrusion on their domains by outside organisations.

It would be a great convenience if all copy for the Journal could be sent to me at the above address by the 25th. of each month, so that I may make an early start on the next number. In this connection, I would mention that the most important section of the Journal from the point of view of the Clubs activities is that of "Exchange and Wanted" so I hope that any members with duplicates for disposal will send me their lists for inclusion.

L.R.Tesch,  
Hon. Secretary.

NOTES.

We are indebted to Mrs. Head, of Burniston, Scarborough, for the following very interesting notes on the controversial subject of whether Red Admirals do, or do not, hibernate. These bring out very clearly the fact, not always appreciated, that genuine "hibernation" is something more than a fortuitous survival of a winter.:-

RED ADMIRALS DO NOT HIBERNATE.

Regarding the hibernation of the Red Admiral, in all the correspondence in various dailies and journals, it is astounding that the crux of the whole argument is always evaded.

Mr. Teschemaker's remarks re this species decided me to point out to members of the Club a few facts on the hibernation of insects.

Mr. Head has had over fifty years intensive work among insects - not as a hobby, but as a full time profession.

Hibernating his butterflies is one of his regular annual tasks. When all his hibernating stock are dormant in their several receptacles, these receptacles are housed, where they will be left undisturbed until hibernation is over. The hibernating butterflies will await their due season to return to activity, breed and continue metamorphosis.

The Red Admiral does not hibernate.

Mr. Head has had Red Admirals during many winters and any sunny day will awaken them to activity at any time. They cannot remain during the hibernating season of the other species without food. Mr. Head has to feed Red Admirals at each active period during the winter, and he has had ova, larvae, and pupae all on the go during the hibernation period of other species.

When a Red Admiral goes into the hibernation quarters of other species, where no disturbance is allowed, it has always been found dead when the other species are released for breeding.

The fact that Red Admirals have been seen in January by many of those who claim them as hibernators proves Mr. Head's point, if only those who cite this as proof of "hibernation" would accept the definition of hibernation as "a dormant state for a definite period".

Mr. Kennedy writes:-

"Do any of our members try sugaring as early as March or April? During the few mild evenings we had towards the end of March I tried out a bit of sugaring mixture on posts stuck in likely corners of the garden. Four nights sugaring brought in five specimens of the Common Quaker. I had not yet met with these before, so they were a welcome addition to a new collection. No other species came to the sugar patches, so I expect they are still "in bed", but April should increase the varieties. Sugaring is exciting and interesting, and a valuable means of adding to our collections. Many species are easily procured in this way, which are difficult to obtain by means of the net. April should be worth a bit of sugar!"

Some time ago Mr. Rollason kindly sent me details of a larva-rearing device, which I am reproducing on a separate sheet, together with sketch. Incidentally, it was Mr. Rollason who very kindly contributed the diagram of a Moth Trap which appeared in No.3 Journal, and which aroused considerable interest. I gather that more than one of our members are intending to make one like it.

Mr. Rollason also mentions having found a specimen of *Auricoma* (Scarce Dagger) in a crevice of a stone wall on March 21st. This seems to be very early indeed for this insect to put in an appearance, although it is reported as being double brooded and appears in May from pupae of the previous year. It would be

interesting to know whether any other members have seen this so early. Mr. Rollason thinks that possibly the presence of its food plant (blackberry) in great profusion in the neighbourhood may account for it.

Mr. Briden mentions having taken on March 17th. larvae of Rubi (Fox Moth), *Villica* (Cream Spot Tiger) and *Quercus* (Oak Eggar, while he and several others mention the appearance of Brimstones, Peacocks, and other hibernators.

Mr. Wood sends an interesting cutting regarding early spring moths, an extract of which I give here, with acknowledgements to "The Scotsman":-

"Sunday, March 8th was really the first spring day we had in East Lothian.....and driving home after darkness, I was surprised at the great number of small brown moths which flitted across my lights. I ran suddenly into a great cloud of the insects. They drifted across the headlamps like the husks of the beech buds in a sudden breeze. It was a most astounding spectacle at this time of the year, for so numerous were they that they reflected the headlamps back into one's eyes, demanding a slackening of speed till, in the space of a few yards, the air cleared. Two miles further on, on approaching the village of West Saltoun, I ran into another cloud of the same kind, and arriving home, my headlamps and windscreen were covered with them." It would be interesting to hear more about these hardy winged Adventurers of the early spring.

"Some years ago, when motoring through the New Forest at night time, I met with a similar experience on a larger scale. Near to Boldrewood our car was veritably brought to a standstill by an almost impenetrable cloud of moths. The reflection from their fluttering wings made visibility of the roadway ahead impossible, and when I dismounted from the car, my clothing was instantly covered with them. Another car, travelling in the opposite direction stopped alongside us, and the driver told me that it was the second cloud he had encountered. While we compared notes, the air suddenly cleared, and we went our ways.

H.M.B."

(What would these moths have been? Ed.)

Some time ago, Mr. Brangham sent me the following note which I intended to include in the next Journal, but inadvertently overlooked. I give it now, with apologies for the omission:-

"Let any member with time and money at his command try treating his pupae with shortwave diathermy "wetted" with ozone. I can give him a written guarantee that he would have a 75% speedier emergence, and a 25% healthier brood".

(This was in connection with the effect of light and specialised rays on insect life.)

I am now turning for a moment to Mr. Walker's very interesting paper on lepidoptera in the Torquay district, from which I took some extracts from our last number:-

Among the Hawk Moths *Ocellatus* (Eyed Hawk) is fairly common. *Populi* (Poplar Hawk) is common, the larvae being frequently taken on willows, there not being much poplar in the district.

*Atropis* is not rare. The Death's Head has been taken at street lamps, on poles, and the pupae are not infrequently dug up in allotments.

*Convolvuli* (*Convolvulus* Hawk) can generally be taken where good clumps of Tobacco Plants are available. Mr. Walker reports, however, that though he found the larvae from time to time he never induced them to pupate. Instead they wandered about under the soil and dried up.



Ligustri (Privet Hawk) is most frequently found in the Torquay district, the larvae being found on privet, ash, laurustinus and holly.

Livornica (Striped Hawk) is occasionally found, and has a tendency for the flowers of the Bladder Campion and Petunias in gardens.

Elpenor and porcellus (Elephant Hawks) are rather rare though they have been taken at light.

Mr. Walker then touches upon a subject of great interest to those who operate at light. He says:-

The introduction into Torquay of electricity for street lighting opened up quite a new chapter for me, entomologically. The first street lamps were of the carbon type, and were very attractive to moths..... When the carbon system was replaced by filament lamps, moths ceased to visit them in any numbers, and one very seldom sees a moth flying round a filament lamp now. The same is true in the case of gas lamps. When we had the old-fashioned direct fish-tail burners in the street lamps, plenty of moths could be taken at them. But on the introduction of the gas mantle, these too have become deserted, except by a few micros.

I wonder what quality or ray is missing from the new forms of illumination, as modern systems of electric or gas lighting are not as attractive as were the old systems.

(Editorial note: In an earlier issue of the Journal, I remarked on the apparent scarcity of insects, especially at light, and compared the poor results I obtained in this way last year with those of twenty odd years ago. In those days I used an old-fashioned oil lamp with a yellow flame, and my room was replete with insects. Last year I used an oil lamp but of the incandescent mantle variety, and insects were few and far between. I was under the impression that the brighter the light, the better the results, but apparently it is not so, and my experience seems to bear out Mr. Walker's contention that the new systems of lighting are not as effective from the entomologist's standpoint as the old.

At the same time, the searchlights at the Aldershot Tattoo seem to attract a large number of moths, and I have watched them enviously, wishing for a long handled net. I fancy, however, that the G.O.C., Aldershot, would hardly regard such activities sympathetically!)

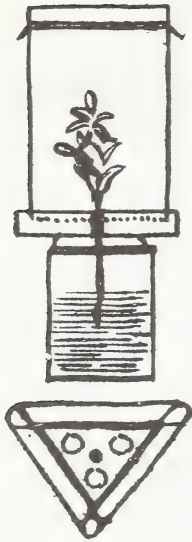
I am attaching a few sketches of larva-rearing appliances which I have used with fair success. Fig. 4 represents an attempt to cope with the problem of confining newly emerged larvae to the vicinity of their food-plant - by no means always an easy feat. A piece of wood about 12" X 4" and 1/2" thick has 1/4" holes bored in its centre at 3" intervals. Around each of these holes are arranged four big-headed tacks in the form of a square about an inch across. Covering the tacks and hole is a small slab of plasticine, with a hole in its centre to correspond with that in the wood.

A small piece of food-plant is placed in the hole with its stalk an inch or two below the wood, and the plasticine pressed round it.

A glass tube 2" long and 1" in diameter has one end covered with fine gauze held in place with a rubber band. The other end is placed over the food-plant, centrally, and pressed down into the plasticine just sufficiently to make it stick there.

The whole thing is then placed on a pie dish or other receptacle to hold water.

Fig. 5 is a cylindrical cage to accommodate larvae at a later stage, and Fig. 6. is their final home, which also serves as a pupating chamber.



Mr. Rollason's larva rearing appliance consists of a triangular block of wood with three saw cuts across the face, about one quarter inch deep.

Three panes of glass slide on their bottom edges in these cuts and are held in position by a rubber band. Over the open top of these glasses is stretched a piece of fine net material, also held by a rubber band.

In the centre of the block of wood is a hole to take the stalk of the food plant and around this hole are three others, larger, and covered with a piece of wire gauze. These vent holes are essential, both for ventilation and to give that humid atmosphere without which some species will not exist. The glasses must be taken apart for cleaning and to renew the food plant. The block of wood is stood on a jar of water, as shewn in sketch.

#### Q U E R I E S

No.14. With reference to rearing of freshly hatched larvae We are always given to understand that if kept in a glass or metal container, the presence of condensation moisture is likely to prove fatal, both to unhatched ova and to the larvae themselves. Why is this? In a state of nature, both must receive the full effects of rain and thus get infinitely more wet than they could do from condensation. Is there some inherent quality in this moisture which is disastrous?

No.15. Certain ova require to be kept moist, otherwise they will not hatch. How is this best accomplished?

(N.B. many queries in previous issues have not produced any replies to date. It would be very greatly appreciated if members would very kindly glance through these and send in any suggestions they may have to offer).

#### E X C H A N G E   &   W A N T E D .

Mr. A. Wise, 13 Third Avenue, Heworth, York, wants to obtain secondhand a cabinet, a collecting box, beating tray, collecting sachel, setting boards, a long handled net for "lamping". Will any members able to assist, kindly communicate with Mr. Wise direct.

Mr. A. Smith, 23 First Avenue, Heworth, York, has for disposal the following insects:-

Palacea (Angle Striped Sallow); Indignata (Ochreous Pug); Pusillata (Dwarf Pug); Firmata (Pine Carpet); Exoleta (Sword Grass); Vespertaria (Dark Bordered Beauty). He wishes to obtain:-

Ocellaris (Pale Lemon Sallow); Sobrina (Cousin German; Interjecta (Least Yellow Underwing); Subsequa (Lunar Yellow underwing); Brunneata (Waved Umber).

L I S T of M E M B E R S.

In addition to those notified in our last issue, and in the special list issued with it, the following are welcomed to the Club:-

Mr. C. H. Veale, c/o Y.M.C.A., Great Russell Street, Tottenham Court Road, London, W. C. 1. (Lepidoptera)

Mr. H. Dodds, 4 Mansfield Square, Hawick, Roxburghshire, Scotland. (Lepidoptera)

Total to date - 31.

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(Several other enquiries still awaiting replies.)

SUPPLEMENTARY.

Since completing the above the following has come to hand:-

Mr. A. Capener, The Limit, Osmington, near Weymouth wishes to exchange "wing-prints" with members abroad. (This is in reference to the very interesting contribution on the method of obtaining "wing-prints" by Mr. Capener in one of our earlier issues.)

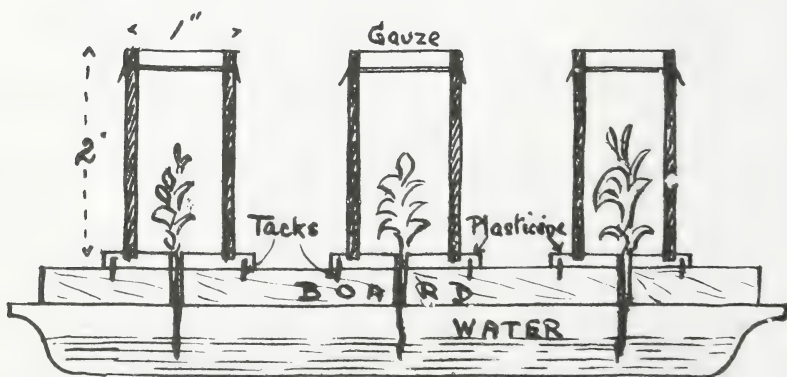
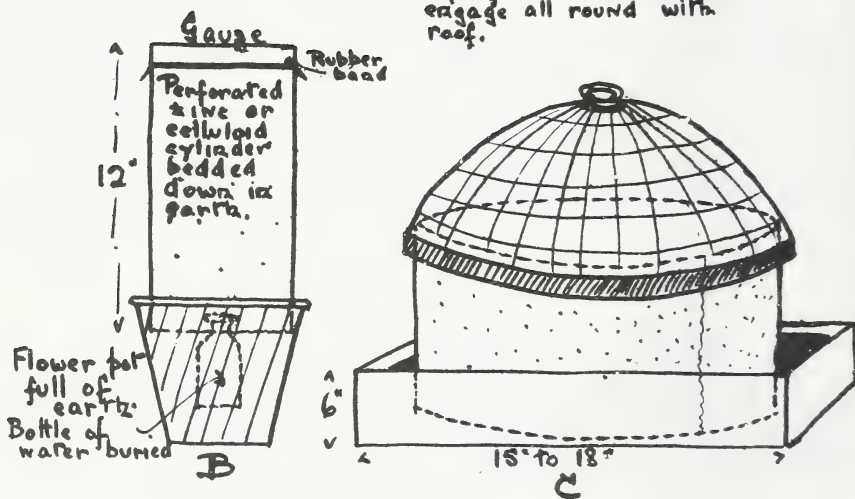
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ADDENDUMList of Members.

Mr. G. Nicholson, "Rosedale" 24 Nuns Moor Crescent, Newcastle-on-Tyne (Lepidoptera)  
Wants Chalk Hill and Clifden Blues.

# Larvae rearing cages

Box filled with earth.  
Perforated zinc sheet  
beat to oval and "sewn"  
down side, 10" deep.  
Domed wire meat cover  
forms roof.  
Top of zinc walls must  
engage all round with  
roof.



## Sectional View

(for newly hatched larvae)  
A depression may be made in plasticine to hold ova.



THE JOURNAL OF  
THE ENTOMOLOGICAL EXCHANGE & CORRESPONDENCE  
CLUB.

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No. 8.

May 1936.

The Grove, Loseley Park,  
Guildford, SURREY.

I am glad again to be able to report an increase in membership since our last issue, and we are gradually approaching the forty mark. It is my hope that we may at least have reached the half century by the end of the season, which will be a useful start towards our first milestone of one hundred members.

Whether an interest in entomology is given us at birth, or whether it can be engendered later in life, I am unable to say, but I venture to suggest that there must be many lads without any particular hobby, who, if they could be shewn that there is something more in collecting insects than merely dashing madly about with a net, might well become enthusiasts, and, let it be whispered, join our club. If any members have time and opportunity for experiments along these lines, they will be doing interesting work, and they would very likely help our enterprise at the same time.

Why is it, by the way, that generally speaking, the fair sex seem to be quite "without the pale" so far as entomology is concerned, at all events in the collecting section of it? I have never seen a girl with a net, nor have I heard of any who have taken up the hobby. There are lady experts in reptiles, birds, shells, plants, and so forth, but I have yet to meet any interested - except, perhaps, in an artistic sense - in butterflies, moths, or other insects. I have had some sixty enquiries concerning the Club, but never one from the opposite sex. Perhaps the traditional horror they are supposed to feel at the sight of a "blackbeetle" (which, generally, is neither black, nor a beetle) leavens the whole of the insect world in their estimation!

Is it too much to hope that our Club may be the means of shewing them that there is a vast amount of beauty and interest in entomology, which need not entail their touching a net, if they do not wish? Now who will be the first member to bring a Venus into our circle? (No prize offered!!)

May I express my thanks to those members who have been so prompt in sending me their subscriptions? These materially help the wheels to go round, and I look forward to receiving those still outstanding - a very considerable number, by the way - as soon as they can conveniently be sent.

I am very grateful, also, to those who have so kindly sent me "copy" for the Journal. I have one or two items now in cold storage for the next number and I should very much like some contributions from those members who have not so far burst forth into print, beginners or otherwise. Anything entomological is very welcome.

L. R. Tesch,  
Hon. Secretary.

N O T E S.

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Mr. Walsh sends the following instructions for setting small Coleoptera, Hymenoptera, etc, which, owing to their minute size, are difficult to deal with in the usual way:-

"Many years ago, the late Mr. A. J. Chitty suggested a method of setting difficult Coleoptera which I have tried with

small Neuroptera, Hymenoptera, etc. with great success. The insect is put into a small tube into which is then put a small piece of cotton-wool slightly moistened with ether. As soon as the insect is quiet, but not dead, it is taken out and mounted. It is then put back, on its card, into a larger tube with a larger wad of cotton wool soaked in ether, and left there until it is dead, say for a quarter of an hour. It is then removed and left to dry. The specimens can be mounted on No. 6 Bristol Board, or on sheets of celluloid, which can be bought fairly cheaply as scrap at a garage. In this way the undersides can be examined with ease. It is pointed out that with celluloid paradichlorobenzene should not be used as an insecticide. Naphthalene is preferable."

Mr. Cooper writes in reference to *P. hippocastanaria*:-

On March 21st. last I met with this species flying commonly over the heather after dark on a small heath in Surrey. Most specimens were newly emerged, but many appeared in very worn condition. A week later, in the same spot, I took another fresh specimen by day, resting on a twig. Is not this very early for this species? Perhaps members from other districts can throw light on the usual date of appearance of this moth in their respective localities?

Most writers give May and August as the time for imagines with larvae in the autumn. South II, p.318, says it occurs in April and May with a partial second flight in August. Meyrick's Revised Handbook (1927) p.297 gives September to April as the time of appearance of the larva. Thus, there appears to be some confusion as to the life history of this rather local species. Perhaps some member who has carefully studied this insect, both in captivity and in the wild state will be able to write a detailed account of its metamorphosis in some future Journal. (Request seconded. Ed.)

Mr. Cooper later sent the following on the same subject:-

Extract from The Entomologist, Vol. 6 (1872), to which, acknowledgments:-

"*P. hippocastanaria*. This is a very peculiar species in my opinion, with regard to the time of appearance in the perfect state, for, like *R. crataegata* (Brimstone moth) it is stumbled upon at various seasons, but possibly it resembles that species in being double or triple brooded. That *hippocastanaria* is at least double brooded I have no doubt as I take it in good condition in early spring, and again, in equally good order, in September. I have taken it as early as February 22nd. and as late as the end of September, but I have also taken a few good specimens in July. In fact, I am not surprised to take a specimen on the heaths at any date between spring and autumn. It seems to me that individual specimens of the same brood often remain in the pupa state, and are developed long after their relations have passed away, and this observation is confirmed not only this season, but by experience in former years."

During the coming season, Mr. Cooper is intending making a collection of the hymenopterous parasites of lepidoptera, and would be very grateful to breeders who may come across any such, if they would send them to him (61 Okehampton Road, Brondesbury Park, London, N. W. 10) either alive as pupae, or dead as unset and unpreserved imagines. From the large ichneumonids and braconids down to the minute Chalcidae and egg-parasitic Proctotryptidae, from the singly occurring species to the Microgasterids, which sometimes occur in hundreds in one host, all would be most welcome to him, together with any information to host, food-plant, date of emergence, locality etc. He requires these for purposes of study.

Mr. Glanfield writes:- "The first Jersey Tiger I obtained in my collection was found on the doorstep of a house in Exmouth, Devon, during the early part of August. Since then, I have only managed to catch one more, and this occurred under rather unusual circumstances. Whilst staying on holiday in the same house in the following year, I found another Jersey Tiger in identically the same spot as the former one. A happening such as this is unusual because of the comparative rareness of the moth, and because both specimens were in strong sunlight, when plenty of shady corners were available." (This is both a day and night flyer, which may account for its liking for the sun. Ed.)

In reference to the diagram and description of a Light Trap for Moths, which appeared in a former issue, Mr. Kennedy contributes a sketch and notes of another type, which has as its main feature the presence of as large a lighted surface of glass as possible. This, with details, is reproduced on a separate sheet.

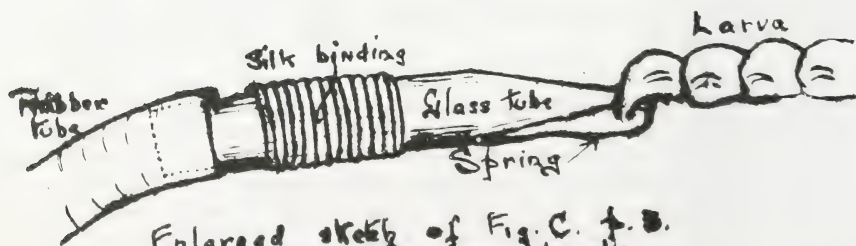
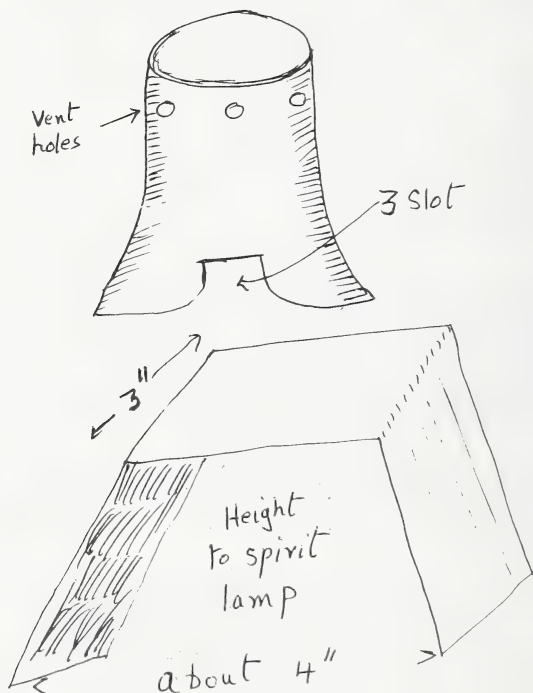
Mr. Rollason sends the following very instructive notes on that interesting, but seldom achieved, branch of entomology, Larva Preserving;-

"A fascinating branch of Entomology is the preserving of larvae, and the following notes may be of interest to members who would like to add increased interest to their collections. The actual materials required are few and inexpensive, being a few pieces of glass tube about a quarter of an inch in diameter, an odd length of clock spring (say, about one-eighth inch wide, light and springy, a small methylated spirit lamp (or even a paraffin lamp usually used as a night light) and an ordinary circular tin box, about three inches in diameter - a cocoa tin is quite suitable and finally, about a foot of rubber tubing to take the end of the glass tube. These are all that is necessary, and, with a little patience, will produce the required result.

First, take a length of glass tube, holding the centre over a flame until dull red, then pull out into a taper until at the thinnest part it is approximately one-sixteenth inch in diameter, so that by snapping through in the centre, two tubes are produced as in sketch.

Slightly heat the ends, so as to take the sharp cutting edges off, but not sufficiently to fuse the small hole at the end, and so stop it up. Then take the tin box (without lid) and cut three slots so as to make a three legged hot table under which the spirit lamp is later placed, as per sketch below. A piece of tinned iron could be bent to form the table, if preferred to the tin box method. Should this latter method be employed the table would have the appearance of sketch In either case, the flame must not be too near the underside of the table, as a gentle heat only is required. In sketch C is shown the rubber tube stretched over the large end of the glass tube and the spring bound on the latter. The end of the spring must be slightly rounded so as not to damage the last (anal) pair of claspers.

With these small preparations the operation of preserving is now started. Take the desired larva, and having dropped it into hot water to kill it, take it out, laying it on several thicknesses of white blotting paper, and commence rolling from the head end with a circular lead pencil, lightly driving out from the anal aperture all the soft internal material until skin is left empty. Then immerse in warm water to cleanse it.



Enlarged sketch of Fig. C. & B.  
which has not been clearly  
reproduced



Dry slightly on blotting paper, and place tapered end of tube in the anal orifice, lifting spring and gently applying same on underside of larva to clear claspers, as shown in sketch. Then inflate by the mouth through rubber tube and hold larva over hot table top, keeping it on the move to give even drying. Care must be taken here not to apply too much wind pressure or unduly to distend the segments as nothing looks more amateurish and unsuccessful than a bloated looking larva. With care the individual life shape of the larva is retained, whether a Geometer or a shapely *Vinula* is being operated on.

Personal care is required at this stage, and if a gentle continuous air pressure is used, it is half the battle, the slow drying being the other half.

Hairy larvae, such as *Caja* (Tiger) etc. must be emptied carefully so as not to get the hairs saturated with the emerging entrails, and carefully washed also, after the process.

If the larvae for any reason do not leave the end of the tube when inflated, a small moistening with warm water round the anal orifice will free the specimen. Mounting can then be performed in any way to suit food plant, either on stem or leaf, but the latter, owing to shrivelling is not too good a method. Many ways can be found to suit the operator, and with a little seccotine the larva is a fascinating object to pin in the cabinet drawer. In fact the whole life history from ova to perfect insect, can be set up in groups, even to the preserving of three or four stages of the growth of the larva where colouring often varies in many species.

Pale green larvae are the most unsatisfactory, as when preserved, they seem to lose what little colour they once had. This can to a great extent, be compensated by dyeing, if one is willing to go to this further trouble.

I can unhesitatingly recommend larva preserving as a fascinating and interesting hobby".

Mr. Rollason adds that he will be very happy to give any further information on this subject to any members requiring it.

From Mr. Pilleau come the following very useful and interesting hints:-

In reference to the question of setting and the chance of damaging the wings with the needle, after having pinned a narrow strip of tracing paper next to the thorax, adjust the wings, partly by blowing them up, and partly by putting the middle of the needle lightly against the edges of the wings. If the point of the needle is used on the wings there is every likelihood of scratching the wings, especially in *Hyperanthus*, *Minima*, *Pruni*, *Janira* etc.

Mr. Pilleau mentions a batch of 350 larvae and pupae of *Machaon* he once had and in September, when all pupated, had them tested to see whether they were ichneumonated or not. The test consisted of putting each pupa in the mouth. If warm they were stung, and if cold they were healthy. This proved an infallible test. (One should be careful not to swallow suddenly while doing this test! It is suggested that a safer method is to touch each pupa with the tip of the tongue while still holding it securely in the fingers. Ed.

#### QUERIES.

nil.

#### REPLIES

To Nos. 7 and 15. Mr. Rollason writes:- "I have found that most ova require a certain amount of moisture to keep them "chewable" by the imprisoned larvae when escaping, and I

think my method is simple and effective. I take a small glass salt cellar, a plain oval domestic pattern, placing in the bottom few thicknesses of chemically pure blotting paper, as used by botanists for preserving specimens. This is slightly damped and the ova placed upon it. If ova are laid on leaves or twigs then put these as near as possible to the damp paper, Place a piece of butter muslin on the top, fixed with an elastic band. The food plant should be placed in the salt cellar in small quantity only. This is important, as though the leaves keep fairly fresh on the moist paper, they require replacing fairly often. Special care is needed in seeing that the paper is cut to shape and well bedded down in its slightly moist state, as the larvae wander about considerably and are apt to get lost or starved under folds of the paper unless this is guarded against.

Care must also be exercised when taking off the muslin, as the tiny larvae may get flicked off by the rubber band removal if they happen to be on the underside of the muslin. Above all, never use the fingers to remove the larvae or replace them on the leaves, but use a small camel hair brush.

My own opinion is that direct handling of larvae is very detrimental to their health. An eye should be kept on the moist paper to make sure no mould occurs. Possibly distilled water should be safer, or a frequent removal of the paper to be replaced by new.

A small glass vessel is much better than a large one as should the larvae go a-wandering (which, out of pure cussedness, they often do) the restricted space soon brings them to the food plant again. As they get larger, a removal to one of the larger forms of cages, as recently illustrated is advisable.

(To Nos. 14 & 15 Mr. Cooper writes:- "Ova are scarcely likely to be troubled by undue moisture, for although they do breathe and transpire to a small extent it does not hurt them to be under water for short periods, but if exposed to an atmosphere with too high a relative humidity they form excellent food material for fungus spores. Larvae, however, "perspire" in much the same way as human beings. If they are unable to do so because the air is already saturated with water vapour, they are unable to lose by evaporation the heat generated inside them, and thus die of over-heating (since feeding and even breathing is accompanied by the evolution of heat). In the open, the humidity of the air never approaches anywhere near saturation point (in Britain)) even during a rain storm, or when the air is "fuggy".

I find that it is usually quite enough to keep ova in a metal pill-box in a cool place away from the sun. A small piece of slightly moist moss of blotting paper may be placed on the bottom of the box if necessary. Young larvae may often, however, be placed in a cardboard box with food-plant, but this is usually unnecessary as they seldom require food for some days after hatching.

#### EXCHANGE & WANTED

Mr. Walker, 7 Mount Hermon Road, Torquay has for exchange various British and Exotic Butterflies and Moths (or for sale) also larvae of *Dominula*, (Scarlet Tiger).

Mr. McLeod, Woolton Lodge, Woolton Hill, Newbury, is particularly interested in breeding, and would like almost any live females, ova, larvae or pupae of Butterflies, or the Hawkmoths and could give in exchange good set insects, -including some of other species of moths.

Would any members interested kindly communicate with Mr. McLeod direct "

Mr. Walsh, "Linthorpe" Stepney Drive, Scarborough, has for exchange many species of Coleoptera from his locality and would be glad to receive many species of Lepidoptera in any of their various stages. Will any of our "Coleo-Lepidopterists" (if I may coin the term) communicate direct with Mr. Walsh?

Mr. A. Kennedy, 152 Lea Farm Road, Kirkstall, Leeds, 5 has a few surplus specimens of the Marbled White and Grayling Butterflies for exchange, also some Sallow, Rosy Rustic, Dark Chestnut, Autumnal and Lesser Broad Bordered Yellow Underwings

He would like a few pupae or imagines of the Emperor Moth.

Mr. Pickett, 6 Chiswick Place, Eastbourne, would very much like to go out one week in May with a collector who can assist him in obtaining a few *Sinapis* (Wood White), also *Lucina* (Duke of Burgundy Fritillary) and in June *Artemis* (Greasy Fritillary). Would any member who can assist kindly write Mr. Pickett direct.

He hopes to have shortly available for exchange larvae of *Villica* (Cream Spot Tiger), *Quercifolia* (Lappet), *Trifolii* (Grass Eggar); *Quercus* (Oak Eggar); *Lanestris* (Small Eggar); *Sibylla* (White Admiral); *Quercus* (Purple Hairstreak).

Mr. Pickett wishes to obtain larvae of *Dominula* (Scarlet Tiger) also any other larvae available.

He is also anxious to acquire a second-hand cabinet, of 6, 8, or 10 drawers, fitted glass tops.

M. Yamamoto, Matsuo-Kozan, Iwategun, Iwateken, Japan wishes to exchange Japanese (and some other exotic) insects of many orders, for British beetles and butterflies, preferably named.

#### CHANGE OF ADDRESS.

Mr. N. C. Pilleau, now at "Lausanne," Kings Road, Horsham, Sussex.

#### LIST OF MEMBERS.

We welcome the following, who have joined since the last issue of the Journal:-

Mr. G. Nicholson, Rosedale, 24 Nuns Moor Crescent, Newcastle-upon-Tyne. (Lepidoptera)

M. Hiromu Yamamoto, Matsuo-Kozan, Iwategun, Iwateken, Japan. (Mainly coleoptera, but also other orders.)

Mr. M. C. McLeod, F.R.E.S., Woolton Lodge, Woolton Hill, Newbury. (Butterflies and Sphingidae)

Mr. D. Tozer, 80 Sparkenhoe St. Leicester. (Lepidoptera and Coleoptera)

Mr. A Pickett, 6 Chiswick Place, Eastbourne, Sussex. (Lepidoptera)

Mr. Fumihito Yano, 1178/2 Mukogacka, Venoshiba, nr. Osaka City, Japan.

Total to date - 37

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#### ADDENDUM.

At the moment of closing this number, a note has come to hand from Mr. Yates who mentions that in addition to some twenty local species, the chalk hills around Reading produce the Lobster Moth and also the purple variety of the Barred Sallow. He also mentions that the Comma Butterfly appears to be increasing in that district.

Diagram and description of Moth Trap  
as constructed by Mr. Kennedy.

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Dimensions 25" long, 18" high, and 13" wide.

Sloping ends A were made by using two picture frames, fixed with the rebate outwards, so that the glass could be laid in and held in position with panel pins,

By way of experiment, one opening is arranged on the left hand end and two on the right.

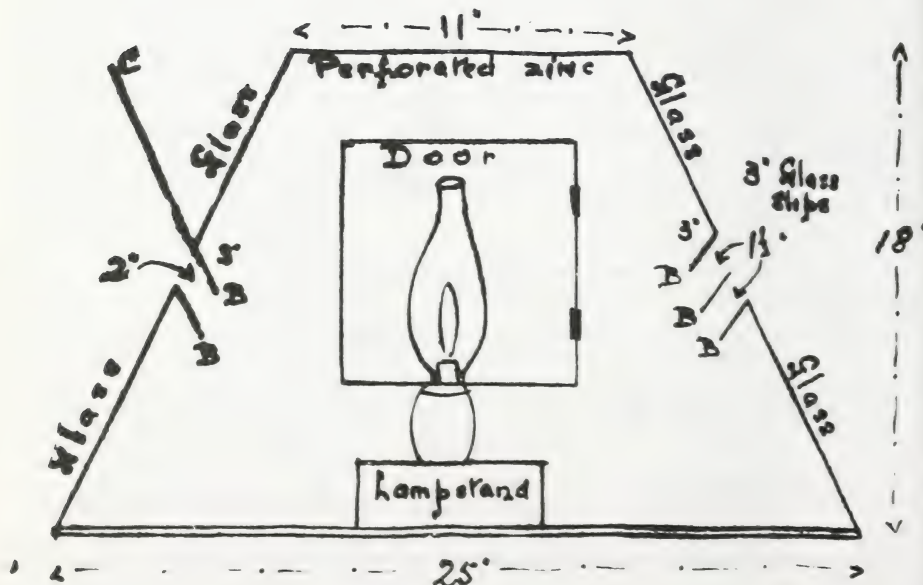
The glass slips B are dropped into grooves as in the design sent by Mr. Rollason and illustrated in No.3 Journal.

The top is covered with perforated zinc, and it might be advisable to arrange a grid over the lamp glass.

A pane of glass B-C juts out at one end and is slid into a groove, though this may be dispensed with and the 3" slip used in its place.

It is hoped that the sloping ends will create a greater area of light, with a resultant greater attractive power than is the case with a vertical sheet in a case.

Mr. Kennedy sates that he would welcome any suggestions for improvement.





THE JOURNAL  
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ENTOMOLOGICAL EXCHANGE & CORRESPONDENCE  
CLUB  
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No.9.

June 1936.

The Grove,  
Loseley Park,  
Guildford, SURREY.

Dear Fellow Members,

I had already completed an editorial for this issue on somewhat normal lines, when circumstances arose which necessitated my scrapping it and writing another, which I do with very genuine regret.

Entirely unforeseen developments have occurred in my business affairs whereby my responsibilities are considerably increased, and my time available for recreation in general, and entomology and the Club in particular, will be reduced almost to vanishing point. This is the more unfortunate, as we are well into our season, and our Club seemed to be well on its way to bigger things.

At the same time, I am sure that members will agree that it is only fair, both from their standpoint and my own, that I should put the position frankly before them, and say that while under normal circumstances, I could find time and opportunity to run the Club and, to the best of my ability, produce its Journals, so far as I can see in the future - at all events for several months to come - this will not be feasible.

If I can find any means of carrying on, at all events through the present season, I will do so, but at the moment, in view of the additional work with which I have been saddled, and which I am not in a position to decline, I hardly think this likely.

Whatever happens, I feel that the Club has so far been appreciated, and that it has served some useful purpose in bringing collectors into touch with each other. This, at least, will remain an accomplished fact.

I feel that this is a somewhat premature set-back to the Club, but unfortunately business has to take precedence, and I have no alternative.

With regard to subscriptions, should I find that I am unable to send out another issue of the Journal, I propose to return to members what I may call the unexpended portion of what they have paid, retaining 3d. per Journal issued as a fair proportion of their subscriptions. I trust that this will be regarded as a fair and reasonable method of settlement.

In the event of any member wishing to take on the task of Secretary, which I am reluctantly compelled to resign, I should be very glad to hear from him, and in that event would naturally do all in my power to assist, so far as the remnant of spare-time remaining to me permitted.

I extremely regret the necessity for writing on these lines - but there it is! Very shortly, I will communicate with members again, as mentioned above,

Wishing you all a prosperous and successful  
season,

Yours very truly,  
L. R. TESCH,  
Hon. Secretary

NOTES.  
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Mr. Walker has very kindly sent me for insertion in the Journal, a paper read by him on the transplantation of species, and I am sure that members will agree that it is most interesting, and offers conundrums in insect life and habits which still remain to be solved. Mr. Walker writes as follows:-

The only butterfly which I have tried to re-colonise is *L. bellargus* the Adonis Blue. Until the beginning of 1900 this insect was fairly common about Torquay in limestone districts, being found at Chapel Hill, Anstey's Cove, Hopes Nose and Daddyhole Plain. It must have been known as a local insect many years before, as it is mentioned by Edward Newman in his book published about 1869.

In the early years of this century it began to get scarce, first disappearing from Chapel Hill, then from Hopes Nose, lingering on at Anstey's Cove till about 1910, then disappearing from there, its last stand being made at Daddyhole Plain until about two years ago. I have never been able to understand why this insect should have forsaken these localities. In this district it was double brooded, imagos appearing in May and again at the end of August and early September. Its foodplant, the Horseshoe Vetch, is still as plentiful as ever in its old haunts. In May 1911, I got a friend in Tunbridge Wells to procure for me from that area some living imagos, males and females, which I liberated at Anstey's Cove. The following year I received another lot of imagos from a friend at Chatham which I again turned down at Anstey's Cove. Both lots, so far as I was able to trace, failed to establish themselves.

*Metacrostis muralis* (or *Glandifera*): The larva of this little moth feeds upon lichens and mosses on limestone walls, and is very local, only favouring certain restricted areas. Imagos emerge in July and August, laying ova which hatch in September. The larvae hibernate when quite small and begin to feed up about February. They have a curious habit of building themselves a shelter in which to rest during the day, in which they are completely enclosed. This is built of bits of lichen and grains of mortar, and they leave their shelters to feed only during damp weather, when the lichens are swollen with moisture. On a wet night, I have seen thousands of these larvae feeding on the lichen.

I have tried to breed them in my cages without success, and have taken tins full of the larvae and placed them along the tops of other walls that looked to me to be likely places they would take to, but without any result. They appear to have a partiality for certain walls, and seem never to extend. Walls on which I found them forty years ago they still frequent, and I seldom see them in a different locality.

*Callimorpha dominula*. I have tried for years to transplant this species. I first found the larvae of *Dominula* at Churston, many years ago, feeding on nettles on the face of the cliff. They were in such large numbers that when they had exhausted the nettles they would eat everything else - almost any weed except grass. This species has now disappeared. The only cove which they used to inhabit was close to the railway line and the Railway Company completely filled in this cove with huge granite boulders, thereby covering up all their breeding grounds.

*Dominula* is still plentiful about the banks of the Dart, and in that district it appears to feed exclusively on *Alkanet*,

I have brought dozens at a time of these larvae, and placed them out in coves of a similar nature, which contained

the same food plants as did the Churston one. I here placed larvae out in woods and quarries but only once did I see an imago and that was from larvae that had been placed down at Petiter. I have also put out hundreds of imagos that I had fed up in breeding cages from wild larvae, but they have never so far as I could trace, reached any other stage.

Another of my efforts to transplant was made with *C. Hera*. This insect is very local, being found only along the coast between the rivers Exe and Teign and never very far inland. I have bred this insect from ova procured from wild females by the hundreds at a time, and the only foodplant I have found to feed them on is groundsel. Imagos for breeding purposes are best caught by beating them up, and it is a very dusty and warm job. One walks a good many miles, in a day's beating, and the hotter the day the better, as then they do not lie so deep in the hedges as they do on dull days.

I have seen *Hera* sharing the sweets of the Valerian with some of the *Vanessas* on very hot days. Like *Dominula* it seems to take a delight in constant short flights in the bright sunshine. I have spent many a day beating up *Hera* and have often brought home two or three dozen imagos a day and released them around this district. I have also released dozens from my breeding cages. Indeed, this insect I have turned down around Torquay in every stage, by sprinkling ova in likely looking feeding grounds, and by turning out larvae both very small and full fed by hundreds at a time, but they have never become established. I have only seen two imagos that were taken in the Torquay district.

The only real success in transplanting was with *Z. Trifolii* the Broad-bordered Five Spot Burnet. This insect used to occur on some marshy ground at Preston, Paignton. At that time, about 1896, this was the only place I had taken it. In that year builders began to dig trenches to drain the land, ready for building houses. I thought that when this started, we should lose trace of *Trifolii*, so I decided to collect all the larvae I could and transplant on similar ground. I took several tins full of *Trifolii* larvae to Knighton Heath, and turned them down there on a marshy piece of ground where there could always be found a few of the commoner *Filipendulae*. These took to their new environment, and the last time I looked, about two years ago, they were still there. This is the only real success I am sure of.

The question arises - why cannot I get *Hera* and *Dominula* to establish themselves in the Torquay district? Their food plants abound and the geological formations are similar in most cases. If we have found them on limestone, we have placed them down on limestone, and *Hera* that have been taken on sandstone formations have been released on sandstone.

In the case of *Dominula* I do not think the *Ichneumon* is responsible, as wild larvae are very seldom stung, and fact that the insects have been released in all stages would eliminate that theory. Then again, why is it so easy to breed them in our cases at home, yet when placed out in the open why do they apparently get no further than the stage at which they were put out?

It seems as though Nature will have her own way with this species.

Mr. Cooper writes, in reference to the effect of light on moths:-

"It is only to be expected that different means of producing light would affect insects differently. It appears insects do not "see" a continuous spectrum, probably in part due to some rays being absorbed by certain organs and some

by others, such as the compound eyes, the ocelli, parts of antennae, maxillary and labial palpi. It appears that most night flying lepidoptera commence their flight when the ratio of infra-red light to that of visible spectrum and shorter wave lengths reaches a fixed constant value. This explains why moonlit nights are usually so unproductive, since this constant ratio is not reached to enable the insects to fly. But when once on the wing, and the moth flies into a beam of light it then automatically turns towards - or away from, in the case of certain insects, - the light. Of course, this constant varies with different species and even specimens and between different wave-lengths of light. For example, with sunflying moths and butterflies the ratio appears to be the blue end of the spectrum (including ultra-violet) to the rest of the (visible to moths) spectrum. Moist earth, trees and other plants, etc. radiate infra-red light after darkness has set in.

Blue lights, such as mercury vapour lamps give, are very attractive to moths and are used in U.S.A. to trap pests in potato fields. I have many times seen moths flying round a blue or green advertising sign in a shop window and neglecting the far more brilliant electric filament street lamp nearby.

Those lights which give out a large amount of red or infra-red light appear to be the most attractive generally. An electric filament or incandescent mantle gas or oil lamp gives out a practically complete spectrum, of which the red end forms only a very small portion of the whole of the light emitted.

Certain types of glass placed round the lamp also absorb more red, infra-red, or violet rays than others and these would therefore be less attractive to insects. On the other hand, the old-fashioned fish-tail gas burner or open flame oil or acetylene lamp gives a light very rich in orange, red, and infra-red wave lengths. The carbon arc type of lamp is very rich in blue, violet and ultra-violet light, so this will be very attractive to moths also.

It also appears that the general introduction of bright lights for house, street, and motor-car lighting may have caused a disappearance of those species attracted most easily thereto, as insects which enter a house at night or are hit by a moving motor vehicle rarely survive that ordeal and so would disappear by natural selection, while their not so easily lured relatives would continue as before."

After the above most interesting and instructive comments, Mr. Cooper goes on to say that he would be very pleased to accompany any members living near London to a suitable spot one summer night to test the effect of various types of light and lamps. If any member possessing a bright acetylene, petrol-vapour, or other collecting lamp would communicate with Mr. Cooper he would be pleased to drive him down one night to test them with various light filters. Mr. Cooper asks that this experiment may not be made until late in June.

Mr. G. D. Greig asks me to state that he is now specialising in the Sphingidae.

From Mr. K. Clarke comes the very interesting suggestion that a special section of the Club should be formed for the study of insect migration - not only in the case of lepidoptera - and he has very kindly offered to take charge of this portion of our activities. He writes as follows:-



"Migration Study. It is proposed to form a bureau in the Club for the study of migration. The purpose of this is to collect as many records as possible of migratory insects occurring in the British Isles or anywhere abroad. These records will then be put in some kind of order, so that it will be possible to trace a migration flight across England. The numbers of these flights are of special importance, for by comparing the numbers of a flight seen at different localities and the nature of the ground between these places, some reason for the impulse that causes these flights may be found.

A report will be sent to the Journal whenever sufficient data is collected to make one, and at the end of the season a small supplement will be published with the Journal containing records of the year's work and any articles members may send on migration.

It should be remembered that the Lepidoptera and the Orthoptera are not the only insects that migrate. Fabre, in his "Hunting Wasps" tells how, when ascending Mount Ventoux, he found some hundreds of *Ammophilae hersuta* sheltering from a storm. As this wasp is nearly solitary in its habits, the most probable explanation is that they were on a migration flight.

Darwin, while on his famous voyage in the Beagle mentions having found beetles that were swimming seventeen miles from land.

These facts, although suggestive, are not taken as conclusive, and here our Club can do much work if the members will send in records of any known migratory insect, and any insect they have reason to believe is migrating, giving their reasons in the latter case.

All records in this connection should be sent to Mr. K. Clarke, 7 Stanley Avenue, Wembley, Middlesex.

Information is required as to the migration of the following species:-

Butterflies:- *D. Plexippus*; *V. atalanta*, *V. cardui*; *N. antiopa*; *C. boeticus*; *C. hyale*, *C. croceus*; *A. lathonia*; *V. urticae*, *N. io*, *P. brassicae*, *P. napae*; *P. daplidice*.

Moths:- *A. atropos*; *S. convolvuli*; *S. ligustri*; *H. pinastri*; *C. euphorbiae*; *C. Galii*, *C. livornica*, *H. celerio*; *D. nerii*, *M. stellatarum*, *L. salicis*; *T. jacobaeae*, *A. ipsilon*, *A. saucia*; *C. alsines*; *H. peltigera*; *P. gamma*.

(Species underlined are known immigrants.)

In connection with the above, any estimates of local abundance from time to time would be very useful.

M. K. Kato has sent me a complete list of the Papilionidae of Japan, together with Japanese names. As this is only likely to be of interest to those members exchanging foreign insects, I am not including it in the Journal, but shall be pleased to send it to anyone to whom it would be of use in exchange with Japanese collectors. In this connection, it should be of considerable value.

#### Q U E R I E S.

No. 16. Mr. B. Fox, Beam Wireless Station, North Petherton, Bridgewater, asks for any information as to breeding *Atropos*, and whether forcing or otherwise is advisable. (This is a well known problem, and I believe that in a state of nature a large number of ova never hatch. Ed.)

No. 17. Have any members any experience of the Isle of Wight as a hunting ground for Lepidoptera? No "state secrets" as to localities of specific rarities are asked for, but merely a general idea as to possibilities, with a note of the most likely section of the Island.

No. 18. Mr. Wise asks whether any of the Sphingidae are known to come to light, also whether any members who use Moth Traps have taken any of this family in them?

EXCHANGE & WANTED

M. Kiichiro Kato. c/o Matsuo-Kogyo-Kaisha, Iwate-gun, Iwate-ken, Japan, can send specimens of all orders of Japanese insects. He wishes to obtain unset specimens of British Lepidoptera, Coleoptera, Homoptera and Heteroptera. He wishes to state that he is not in a position to supply either living ova or pupae.

He is also interested in stamps and postcards.

LIST OF MEMBERS.

We welcome the following who have joined since our last issue.

Mr. A. Pow, 19 Wyndham Road, Ardbug, Rothesay, Bute, Scotland. .

Mr. S. Stidston, Ashe House, Ashburton, Devon

Total to date - 39.

#### ADDENDUM.

The following has come to hand since setting up the main copy:-

Apropos the vexed question of the hibernation or otherwise of the Red Admiral, Mr. Teschemaker writes as follows:-

"I must thank our member, Mrs. Head, for her note on this subject, in which I was much interested. I referred to the "accepted theory" of the hibernation of this species because this is the view expressed in such standard works as Mr. Frohawk's "British Butterflies". I am surprised to hear that Mr. Head finds no difficulty in bringing the Red Admiral and other species through the winter successfully, because I have always understood that this is a difficult achievement. I have made many experiments with hibernating mammals, and, though such species as the Squirrel present no difficulties, I have never succeeded with any species which normally remains dormant throughout the winter, such as the Dormouse and (European) Oak Dormouse. I have evolved a theory that when a member of such a species finds itself in artificial surroundings at the commencement of the dormant period, its subconscious mind registers "Danger", and this prevents it from attaining the deep and undisturbed slumber which is essential, just in the same way as, in our own case, a resolution to wake up early to keep some particular engagement will almost always have the desired effect.

It is singular that there should be such a conflict of opinions as to the habits of the Red Admiral. On the one hand, Mrs. Head says, quite definitely, that it "does not hibernate", whereas Mr. Frohawk gives specific instances in which he claims that it has done so, in his own words "a certain number enter into partial or complete hibernation and occasionally survive". He refers to a "Butterfly Garden" in Kent where, in 1908 "a number became quite torpid while clinging to the bark of trees. They remained in a very exposed position and declined to use the shelters. In January and March they experienced terrible weather. During February, two were seen flying strongly, and three others survived the whole winter."

I can give one instance myself. Occasionally, butterflies select my bedroom for hibernation and I always see that they are not disturbed. These are usually Small Tortoiseshells, but one winter I had a Red Admiral as a guest. It came in early in October and left very early the following spring. It never shifted its position and was able to leave under its own wingpower.

In a private letter to the writer dated May 16th. 1936, Mr. Frohawk says;- "The Red Admiral keeps on the wing in the South as long as the weather keeps warm enough for it. There is not doubt that this butterfly hibernates when the weather becomes too cold for it. My friend, Mr. Rourke has found it early in the year in rabbit burrows in Devon."

It occurred to me that it would be interesting to ascertain how this species had behaved at the Zoo Butterfly Garden, so I wrote to the Curator of Insects there, and received the following reply from Mr. L. C. Bushby:- "Red Admiral Butterflies have never wintered successfully here, either with or without feeding. Some years ago several were put into cold storage with bad results. Other specimens have been kept in ordinary cages, but without success."

I cannot reconcile all these conflicting statements, but the general conclusion I have come to is that the natural home of the species is some very warm climate where, as Mrs. Head claims, it can both fly and breed throughout the year, on the other hand, there seems to be definite evidence that it does occasionally really hibernate and with success. We must recollect that the Red Admirals we see flying in this country may be (1) actual immigrants, (2) the first brood from the former, (3) the second brood or, possibly, (4) descendents of hibernated specimens. We should hardly expect them all to behave in exactly the same way. I have lately heard that there is evidence of "a return flight" from this country in September, so some may succeed in reaching a warmer climate for the winter.

Mr. G. D. S. Greig, Medwyn, 65 Cavendish Drive, ROCK FERRY, Cheshire, has for disposal healthy young larvae of Carpini (Emperor); Fuliginosa (Ruby Tiger). Also full grown larvae of Quercus (var. callunae) Northern Eggar; Trifolii (Grass Eggar).

He wants larvae of Versicolor (Kentish Glory) and any of the Hawk Moths except Poplar, Eyed, Privet, Elephant and Broad Bordered Bee Hawk.

Mr. Stidston, Ashe, Ashurton, South Devon wishes to get in touch with any members interested in the Plume moths.



THE JOURNAL  
of the  
ENTOMOLOGICAL EXCHANGE AND CORRESPONDENCE  
CLUB

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No. 10

July 1936

The Grove,  
Loseley Park,  
Guildford,  
SURREY.

Dear Fellow Members,

When I initiated the Club about a year ago, I did not expect that I should be compelled, in so short a time, to relinquish it, as I mentioned in Journal No. 9, however, business demands, which were entirely unforeseen and could not have been anticipated, have intervened, making it quite impossible for me to carry out my Secretarial duties efficiently.

I was compelled, therefore, to make the announcement to which I have referred. In making it, I had the secret hope that some means would be found of keeping the Club going, and I was extremely glad to receive an answer to my appeal from Mr. Brangham and Mr. Cooper, who have most generously come forward and offered to carry on the good work. I should like to take this opportunity of expressing my most sincere gratitude to them both.

The three of us had a long interview, and it was decided that, subject to the approval of the members, and to a sufficient response to a circular letter which you will receive with this number of the Journal, they would assume the positions of Joint Secretaries and Editors of the Journal. I feel that the Club as a whole should benefit very largely from this change, as our new Secretaries have both experience and resources of great value to such an organisation, which I do not possess. I have every confidence that our enterprise will go forward with renewed vigour under their guidance, and I need hardly say that I sincerely hope all members will assist them in every way possible.

It only remains for me to express my grateful thanks to all those members who so kindly assisted me in so many directions while I had the pleasure of taking the helm, and I am convinced that without their help and support, the Club would not have reached the sound position it now enjoys.

In saying "Farewell," I would add my best wishes for "good hunting" and prosperity to all,

Yours sincerely,

L. R. TESCH.

B. A. COOPER,  
61, Okehampton Road,  
LONDON, N. W. 10.

A. N. BRANGHAM,  
9, Litchfield Road,  
LONDON, N. W. 11.

Dear Members,

In the Editorial of Journal No. 9, Mr. Tesch announced his intention of resigning the secretaryship of the Club. Unfortunately, he has carried out this threat for the reasons he has given you in his "Farewell." That the Club has suffered a severe blow is beyond denial, and we can only voice the sentiment of our fellow members by wishing him every happiness in what we hope will be only an enforced hibernation from the activities of the Club. Each one of us has, at some time or another, received letters from Mr. Tesch, which amply bear out the impression one gains in meeting him for the first time. If ever we can achieve his intimate style of letter-writing, we shall be satisfied that the members of the Club are being well looked-after.

Mr. Tesch has been kind enough to allow us to assume the cloak of office in his place, and although we cannot hope to live up to his standard of interesting Journals and long personal letters, we shall do our best to continue in the same spirit. On behalf of all the members of the Club, we thank Mr. Tesch for the tremendous work and enthusiasm he has put into the foundation and organisation of the Club. We feel sure that the future will see him - when, we cannot say - returning to the head of affairs.

Mr. Tesch's resignation has, naturally enough, brought up numerous little points, which are incorporated in the hectographed sheet of paper.

You will appreciate our position when we say that the job of running a Journal is no easy one. Therefore, apart from the questions put to you in the ballot-sheet, we would like to ask every member to co-operate in the spirit of the Club. to help the organisers, and to help fellow-members. We would like to see greater activity, more matter for the Journal; we would like to see each member try to induce a friend to become a member. With this new duplicating experiment, it is essential that there should be more members, so that we are not out of pocket. Subscriptions should be sent to us as soon as they become due. There seems to be just one or two retiring members - both as regards entomological material for our columns and subscriptions - but, in general, it does seem to be a fairly active club. But it should be more so. There are plenty of young folk throughout the country who would welcome a club such as ours. It is yours and our duty to search them out.

This Journal is only a "sample" number. It is a specimen of what will appear in the future if the voting is in favour of such a system. We believe that articles by outsiders are useful and that they give the Club greater weight.

There have been no enquiries this month, owing to the temporary suspension of activity, but we would ask you to let us have your queries, notes, your "Exchange and Wanted," and your articles as soon as possible. Most important of all is that you return your voting paper to us by the end of this month - our overseas members excluded - and if there is a representative number of replies, we shall publish the results in the next number of the Journal.

In the meantime, to avoid delay, will you please send your letters to Mr. Brangham, whose address will be found above.

Good hunting!  
Yours sincerely,

B. A. COOPER,  
A. N. BRANGHAM.

Hon. Secs. and Editors.

## THE MIGRATION OF INSECTS.

It will be remembered that in the last number of the Journal, Mr. K. Clarke kindly offered to receive and tabulate all records sent in by members, of the appearance and movements of known and suspected migrant insects, chiefly lepidoptera, as these are more easily identified by collectors. We have now arranged for record cards to be sent to all members who would be willing to return their observations on them. These cards will, after tabulation by us, be forwarded to the Insect Immigration Committee of the South Eastern Union of Scientific Societies, who are carrying out the investigation. If members respond to this scheme as we hope, a summary of the data collected together with any conclusions which may be suggested thereby, will be printed in the Journal from time to time. Should members already be sending these records to their local County Recorder, they should, of course, continue to do so; but we feel certain that this subject will interest many of our readers and should therefore be very pleased for these members to send us duplicate copies if they have time to do so, so as to enable us to compile a more satisfactory list of records.

In order that species may be correctly identified (mistakes will occur, even among experienced collectors), we suggest that doubtful specimens be correctly named by a reliable expert or museum, or failing that, if sent to Mr. Cooper, he will have them identified at the British Museum, Natural History, at South Kensington. Damaged or worn specimens may be of as much value as the perfect ones, but date and locality of capture should always be given with them. Odd specimens of companies of migrants, combined with weather conditions past and present, are of the greatest use. Unset or pinned specimens are almost as easily identified as otherwise, besides being easier and cheaper to send.

It is important to remember that an incorrect record is far worse than no record at all.

The following species among lepidoptera are those that most require special identification;-

*Nomophila noctuella* Schiff., (Rush Veneer); *Agrotis ipsilon* Hüfn., (Dark Sword-grass); *Agrotis saucia* Hübn., (Pearly Underwing); *Caradrina alsines* Brahm., (The Uncertain); *Heliothis peltigera* Schiff., (Bordered Straw); *Cidaria obstopata* Fabr., (The Gem); *Halapia ferrugalis* Hübn., (Rust Dot); *Plutella maculipennis* Curt., (Diamond-back); *Plusia interrogationis* L., (Scarce Silver Y); *Crymodea exulia* Lef., (Northern Arches); *Leucania unipuncta* Haw., (American or White-speck Wainscot); *Leucania loreyi* Dup., (Cosmopolitan Wainscot); *Leucania l-album* L., (White-L Wainscot); *Leucania vitellina* Hübn., (Delicate Wainscot); *Laphygma exigua* Hübn., (Small Mottled Willow); *Heliothis armigera* Hübn., (Scarce Bordered Straw); *Plusia ni* Hübn., (The Ni); *Catocala electa* Borkh., (Rosy Underwing); *Rhodometra sacraria* L. (The Vestal).

The records should be sent direct to Mr. Clarke at Wembley, or to Mr. Cooper when sending copy for the Journal.

As an example of the type of thing which members may help us to find out the following may be of use. On the evenings of June 19th. and 20th. of this year Mr. Cooper noticed large numbers of the Silver Y moth, (*Plusia gamma*), flying about his garden at dusk and later. As many as half-a-dozen were occasionally to be seen hovering together over a small patch of red valerian blossom. Many females were to be seen, ovipositing on *digitalis nicotiana*, *gaillardia*, and other plants, this showing that they obviously were not newly emerged, although some were in very good condition. Unfortunately, Mr. Cooper was unable to keep a look-out on the few previous evenings to say whether these moths had been increasing gradually in numbers as from a normal emergence, or whether mature imagines had appeared suddenly about the 19th. But from the records of others we might be able to observe that these *gammas* first appeared in the Midlands on, say, the 20th; in, say, Cumberland reached their maximum abundance on

the 21st; the following day, owing possibly to a change in wind-direction, temperature, humidity, or other measurable factor, individuals might hve been noticed flying westward out to sea from the Scottish coast.

From data such as these we would be able to trace the course of such a migration, and if carried out over a number of years we should have enough records to enable us to deduce possible causes or reasons for these migrations. Of course, in the above case, we might merely find that we had traced the route of a particular weather-belt, in the hot, moist, thundery weather of which, insects previously present had become more lively and consequently more easily and frequently observed. But such are the trials and tribulations of a scientific observer, and before long, we are sure the truth will out, and make the investigation worth while.

Such are the objects of our project, and in a later article, Mr. Clarke will show how he proposes to systematically tabulate results so as to make them coherent.

B. A. C.

oOo

BOMBYX TRIFOLII  
(Grass Eggar)

Mr. Greig writes:-

"On the afternoon of June 2nd., I went to Formby, a few miles outside Liverpool, and situated amongst the Lancashire sand-hills. Here I found larvae of *B. trifolii*, at first scarce, but later commonly in a spot where there was plenty of dwarf willow. I remained here for about one and a half hours, and found between 150 and 200 larvae (SHAME - Eds.) varying from one to two and a half inches in length. They were mostly found on the moss under the willow and were not easy to detect owing to the brownish-yellow colour of the moss and the golden-yellow of the caterpillars. When walking or stamping among the willow the caterpillars would suddenly turn in the shape of a V, but when touched, curl in a ring in the same manner as *L. quercus*. I put them on the lawn in the garden in three large bottomless wooden boxes, with one side of perforated zinc. I have been very fortunate with them, and obtained plenty of cocoons although there are still a few larvae which have not pupated (July 8th.) The only food-plant I gave them was apple but the main food appeared to be grass and clover. When pupating some buried themselves under the grass, their cocoons being usually somewhat upright. Others spun what might be termed a mat, making the cocoon proper on this, but more usually died before the cocoon was completed. Can anyone suggest why?"

oOo

*BOMBYX TRIFOLII*, I have always found to be one of the easiest larvae to rear from the egg. From 29 ova which hatched this March I have bred 28 healthy pupae, the only one lost being due to mildew, brought on by underfeeding when nearly full-grown.

The ova, which were exposed as much as possible to sun, wind, and rain, from the end of August last, when laid, till the time of hatching, were kept in a glass jar with gauze top. The newly-hatched larvae did not feed immediately, if the weather was dull or cold, some remaining head downwards on stems of *Poa annua* (common meadow-grass), for several days before feeding. In frosty weather they descended into the earth. The larvae continued to feed on *Poa annua* till well into their third skin. The glass containers became like furnaces when the sun shone brightly, but this did not effect the larvae in the least. These curled up under sods of dry earth, and occasionally galloped round in search of choicer food. Like Mr. Greig's they were for a time placed in bottomless boxes on the lawn, and it was noticed that they only ate *Poa annua*, not touching the clover and other grasses present.

-4-



Among other foods which they were seen to eat were:-  
sallows, hawthorn, lupin (*L. polyphyllus*), raspberry, loganberry, lime (*Tilia vulgaris*), and elm (*Ulmus campestris*). The favorite food appeared to be lupin, as well as the less easily obtained willow. For some while, they were placed in a box with growing lupins, on which they thrived. More often than not, they appeared to feed when the sun was shining, but became restless in a very hot sun. The one which died had been kept out of the sun for several days. A very high mortality last year (about 45%) was, I have every reason to believe, due entirely to an insufficiency of direct sunlight.

Not one single hymenopterous parasite has appeared in any of my brood as yet, I am sorry to say!

B. A. C.

oOo

#### THIS WET SUMMER.

We have received several requests for notes showing the effect of this year's weather on lepidoptera. Unfortunately, no notes have been sent in yet on this subject, while my own collecting has had to be suspended for a time owing to causes beyond my control. However, the following my interest members.

This year has been a season of continued bad weather for the entomologist although during the fine spells catches seem to have been well above normal. As far as I can tell from my meagre diary, the prevailing weather conditions were briefly as follows:- January and February mainly wet and windy but mild. Then followed a dry spell, but very little cold weather appeared, at least in the South. During April heavy night frosts and a cold east wind held up emergence, while night ground frosts proved very troublesome throughout May and even early June. Then warm sunny spells continued, terminating in hot thundery weather, ideal for all collecting. The temperature then fell with continued rain and showers, strong wind at times hindering collecting, while heavy dews even on dry nights made roaming the woods and fields very unpleasant.

Taken as a whole, I think insects seem to have been a fortnight later than usual in appearing (again, I am speaking only of the London district). During April many species were as much as a month late. *Xylocampa areola* continued on the wing until the end of May; last year I took a specimen newly emerged, in Surrey on February 23rd., which without doubt was exceptionally early. As previously reported in the Journal (8.2.), I saw *P. hippocastanaria* commonly in the same spot, an unusually date. Although Noctuidae have seemed to be about two weeks late, most Geometridae have been on time. *E. pendularia* (Birch mocha), *T. crepuscularia* (Small Engrailed), and *T. punctularia* (Grey Birch) were taken commonly on April 30th., along with *Drepana falcata* (Pebble Hook Tip). *D. Binaria* was first seen commonly a fortnight later, by which time the two early skippers (*H. malvae* and *H. tages*) were well out. *Brenthis euphrosyne* (Pearl Bordered Fritillary) was also seen, together with one *Pararge megera* (Wall Brown). A single *Tephrosia consonaria* (Square Spot) was also taken this week-end in Bucks. Thereafter most species were retarded once more, but I few records of interest, save that the hot, thundery period found insects very prolific at sugar, light, as well as when disturbed by day beating.

It is impossible to predict whether this wet weather will have any retarding effect on either the time of emergence of imagines, or on the rate of growth of larvae, but it seems probable that little variation will result.

B. A. C.

It has been suggested that our Club should purchase a quantity of the 2nd. Edition of the British Museum Booklet, Set E 57, "British Immigrant Butterflies and Moths" at a discount, retailing these at the usual price (9d.) We shall make no purchase until we know the response of the members. Please keep this in mind. Editors.

EXCHANGE & WANTED.

The publication of Notices of Exchange and Wanted is in no way a guarantee of the British nationality, authenticity, or good condition of specimens. This notice is not given to throw doubt on the bona fides of exchangers but to absolve the Editors from responsibility, in case the liberty allowed should be abused.

Mr. D. Greig, "Medwyn," 65, Cavendish Drive, Rockferry, Cheshire, has for exchange:-

*S. salicis* (White satin), ova, larvae, pupae, imagines unset; *D. vinula* (Puss) ova, larvae; *L. quercus* var. *callunae* (Northern Eggar) ova, larvae, cocoons; *B. trifolii* (Grass Eggar) cocoons; *S. ocellatus* (Eyed Hawk) larvae; and others.

He requires larvae, pupae, etc. of:- *G. quercifolia* (Lappet); *E. versicolor* (Kentish Glory); *D. tiliæ* (Lime Hawk); *C. elpenor* (Elephant Hawk); *H. fuciformis* (Broad-bordered Bee-hawk).

He also wants quickly a live female *H. pinastri* (Pine Hawk), to mate with a live male which he has.

Mr. B. A. Cooper has for exchange ova of *E. chrysorrhoea* (Brown Tail), and larvae of *D. tiliæ* (Lime Hawk), *M. athalia* (Heath Fritillary) (newly emerged), and *A. nebulosa* (Grey Arches). He would like to exchange these for ova or larvae of practically any save the commonest species of lepidoptera. He also wants to obtain growing plants or rooted cuttings of the following:-

*Salix repens* (Dwarf Sallow), *Salix lanata* (Woolly Sallow); this occurs wild in Britain only by mountain streams in the north of Scotland, but is occasionally found in gardens; *Quercus cerris* (Turkey Oak); *Erica ciliaris* (Ciliated Heath); *Buddleia variabilis* (Butterfly Bush); and *Asclepias phytolaccoides*; *A. rubra*, or *A. syriaca* (syn. *cornuti*) (various milkweeds).

Mr. A. N. Brangham requires living specimens of males and females of the following:-

*Cicindella campestris* (Tiger Beetle) or larvae; *Lucanus cervus* (Stag Beetle), *Dorcus parallelipipedus*; *Onthophagus vacca* (Dung beetle); *Melolontha melolontha* (Cockchafer); *Cetonia aurata* (Rose Chafer); *Dytiscus marginalis* (Great Water Beetle); *Meloe proscarabeus* (Oil Beetle); *Aromia moschata* (Musk Beetle), *Rhagium mordax*; *Leptura maculata*; *Necrophilus mortuorum* (Burying beetle); *Clytus arietis*.

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QUERIES.

No. 19. What do members consider the best method of keeping imagines of butterflies and moths alive for a short while for mating and egg-laying purposes? My own experience is that a daub of treacle every two or three days on the side of the breeding cage in which the insects are enclosed is as good as any method. A sponge impregnated with an aqueous solution of cane sugar is apt to dry quickly in warm or windy weather (at least out of doors), and even to go mouldy. I have also occasionally found that with cotton wool similarly treated or placed in a small cup of sweetened water, the misguided insects are apt to lay their eggs on the wool, or in the liquid, thus safely preserving them from hatching. B. A. C.

No. 20. I would like to know if any members have successfully kept alive species of coleoptera for any length of time? I have not been successful in keeping these insects in the open, and under the most natural conditions. Food has generally been refused by the vegetarian species, although *Pterostichus* has been cannibal enough. I have been unable to get males and females of the same species to mate under these conditions. It seems to me that beetles, like many other animals in captivity, change their habits in an alarmingly rapid way, quite baffling the well-intentioned collector. Any member's notes and experiences in this direction will be very welcome.

A. N. B.

The Entomological Exchange & Correspondence  
Club.

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LIST OF MEMBERS

- Mr. A. Glanfield, Devoncote, Darlington Road, Hartburn, Stockton-on-Tees, Durham.  
(Exotics)
- Mr. F. Goode, Welford, 275 Eastern Avenue, Ilford, Essex.
- Mr. B. V. Fox, Beam Wireless Station, North Petherton, Bridgewater, Somerset. (Breeding  
& Insect photography)
- Mr. W. Wood, Ayton, Berwickshire, Scotland.
- Mr. A. Capener, The Limit, Osmington, nr. Weymouth, Dorset. (Butterflies and larger  
moths only)
- Mr. K. Clarke, 7, Stanley Avenue, Wembley, Middlesex.
- Mr. G. Newland, 20 Gledhow Gardens, S. Kensington, London, S.W.5.
- Mr. T. G. Puttick, 62, Aldershot Rd. Guildford, Surrey.
- Mr. D. S. Greig, Medwyn, 65 Cavendish Drive, Rock Ferry, Cheshire. (Moths only)
- Mr. W. E. Teschemaker, Ringmore, Teignmouth, Devon.
- Mr. M. A. Rollason, Valetta, Ladye Bay, Clevedon, Somerset.
- Mr. F. J. Clarke, Goudhurst, Chart Lane, Dorking, Surrey.
- Mr. H. G. Yates, 37, Sherman Road, Reading, Berks.
- Messrs. H. Head & Co. Entomologists, Burniston, Scarborough, Yorks.
- Mr. V. G. Cavill, 4 Lawford St. West St. Bristol.
- Mr. G. E. Hodgson, Lindale, 38 St. Ann's Drive, Sy. Michael's Lane, Leeds, 4. (Insect  
photography).
- Mr. A. N. Brangham, 9 Litchfield Way, Hampstead Garden Suburb, N.W.11. (British Ants).
- Mr. B. A. Cooper, 61 Okehampton Rd. Brondesbury Park, London, N.W.10. (Lepidoptera and  
Hymenoptera)
- Mr. A. Kennedy, 152 Lea Farm Rd. Kirkstall, Leeds, 5.
- Mr. C. Henderson, Braemar, Deane St. Off Knightthorpe Rd. Loughborough, Leicestershire.  
(Coleoptera)
- Mr. J. Walker, 7 Mount Hermon Rd., Windsor Rd. Torquay, Devon. (Exotics)
- Mr. A. Smith, 23 First Avenue, Heworth, York. (Mainly Micros.)

- Mr. F. E. Briden, 40 Oldway Road, Paignton, Devon.
- Mr. N. C. Pilleau, Lausanne, Kings Road, Horsham, Sussex. (Butterflies only)
- Mr. G. V. Day, "Deysholme", Runcton Holme, King's Lynn, Norfolk. (Mainly lepidoptera.)
- Mr. C. H. Veale, c/o Y.M.C.A., Great Russell St. Tottenham Court Rd. London, W. C. 1.  
(Lepidoptera)
- Mr. H. Dodds, 4 Mansfield Square, Hawick, Roxburgshire, Scotland. (Lepidoptera)
- Mr. G. Nicholson, Rosedale, 24 Nuns Moor Crescent, Newcastle-on-Tyne. (Lepidoptera).
- Mr. M. C. McLeod, F.R.E.S., Woolton Lodge, Woolton Hill, Newbury, Berks. (Butterflies and  
Sphingidae.)
- Mr. D. Tozer, 80 Sparkenhoe St. Leicester. (Lepidoptera and (Coleoptera)
- Mr. A. Pickett, 6 Chiswick Place, Eastbourne, Sussex. (Lepidoptera)
- Mr. A. Pow, 19 Wyndham Road, Ardbeg, Rothesay, Bute, Scotland.

#### Foreign Section.

- M. Kirchiro Kato, c/o Matsuo-Kogyo-Kaisha, Iwategun, Iwateken, Japan. (Exchanges all  
orders insects.)
- M. Hiromu Yamamoto, Matsuo-Kozan, Iwategun, Iwateken, Japan. (Coleoptera. Exchanges  
Japanese and other exotics).
- M. Fumikiko Yano, 1178/2. Mukogacka, Uenoshiba, nr. Osaka City, Japan. (Le



THE ENTOMOLOGICAL EXCHANGE & CORRESPONDENCE  
CLUB.

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Hon. Secretaries:-

B. A. Cooper,  
61 Okehampton Road,  
London, N. W. 10.

A. N. Brangham,  
9 Litchfield Way,  
London, N. W. 11.

Dear Member,

As you will have noticed in the last Journal, Mr. Tesch has unfortunately been obliged to give up the work of running the Club and its Journal. As a result, he has kindly permitted us to take over the work, but before commencing in real earnest, we would place before you a number of changes which we propose to make.

It is only fair to all concerned that each suggestion should be put to the vote, so we have compiled the following ballot form to enable us to learn the views of each member. You are asked to fill in an answer to each question and to return it if possible by the end of the month. We should also be very grateful for any other comments and suggestions which members may put forward.

We do not intend to commence Journal No. 11 until sufficient replies have been received to enable us to know the opinion of others on these matters.

We have come to the conclusion that, owing to the time taken to produce the Journal on the "jelly-pan" system, we shall be quite unable to continue its production by this method. Also, since we hope to enlarge the Club and increase its activities, we consider that a better produced Journal would amply repay the extra expense incurred. The only course open to us, therefore, is to use the Roneo or a similar system of duplication. Another expensive item which has hitherto been met out of the Secretary's pocket is postage, and we consider that this, or at least a part of it, should be paid for out of Club subscriptions. This, however, is quite impossible at present.

The ballot form ends with a question to find out who, if any at all, would be willing to forward to us records of immigrant insects which they might observe. Also, may we repeat, all criticisms and suggestions of any kind will be most welcome, however trivial they may seem.

These forms should be returned as soon as possible to Mr. Brangham's address, given above.

Hoping to receive prompt replies from all,  
Yours sincerely,

B. A. Cooper,  
A. N. Brangham,

Hon. Secs.

THE ENTOMOLOGICAL EXCHANGE & CORRESPONDENCE CLUB

BALLOT PAPER NO-----

NAME-----

1	ARE YOU IN FAVOUR OF RAISING THE SUBSCRIPTION TO 5/- PER AN., AS FROM JAN 1ST 1937? (JOURNALS MONTHLY)	(X)
2	WOULD YOU PREFER A SOMEWHAT LARGER JOURNAL EVERY TWO MONTHS, EXCEPT WHEN FUNDS PERMITTED IT MORE OFTEN, SUB BEING RAISED TO 3/6 (5/- ABROAD) PER AN. PROBABLY 9 JOURNALS PER AN.	(X)
3	DO YOU AGREE THAT ALL ENQUIRIES FROM MEMBERS DESERVING REPLY OTHER THAN THROUGH THE JOURNAL SHOULD CONTAIN A STAMPED ADDRESSED ENVELOPE, TO SAVE US POSTAGE?	(YES:NO)
4	ARE YOU IN FAVOUR OF SUBSCRIPTIONS BEING DUE WITHIN THE FIRST 3 MONTHS OF THE YEAR, WITH A PROPORTIONAL SUBSCRIPTION FOR NEW MEMBERS, INSTEAD OF AS AT PRESENT?	(YES:NO)
5	DO YOU AGREE THAT NO FURTHER COPIES OF THE JOURNAL SHOULD BE SENT TO MEMBERS WHOSE SUSCRPTIONS ARE NOT RECEIVED BY MARCH 31ST?	(YES or NO)
6	THE FOLLOWING NAMES HAVE BEEN SUGGESTED FOR THE "JOURNAL" PLACE IN ORDER OF POPULARITY:- A THE JOURNAL OF THE ENTOMOLOGICAL EXCHANGE & COR. CLUB B THE ENTOMOLOGICAL JOURNAL C THE ENTOMOLOGISTS' JOURNAL D THE ENTOMOLOGISTS' BULLETIN E ENTOMOLOGY F THE INSECT JOURNAL G THE JOURNAL OF INSECT LIFE (FURTHER SUGGESTIONS SOLICITED)	(NOS1....7)
7	DO YOU CONSIDER THAT OUR ORGANISATION SHOULD CONTINUE AS A "CLUB", AND NOT , SINCE IT HAS NO COMMITTEE AND NEVER MEETS, MERELY BE CALLED A JOURNAL, MAGAZINE OR BULLETIN?	(YES or NO)
8	DO YOU THINK THIS CLUB SHOULD HAVE A COMMITTEE, AND IF SO, WHAT FORM SHOULD IT TAKE? (FILL IN OVERLEAF)	(YES or NO)
9	DO YOU CONSIDER THE NAME OF THE CLUB ADEQUATE, AS IT STANDS, AND NOT TOO LONG? IF NOT, WRITE SUGGESTIONS OVERLEAF	(YES or NO)
10	HOW DID YOU HEAR OF THE CLUB? (e.g. "FROM BRITISH MUSEUM NOTICE, VIA A FRIEND")	
11	ARE YOU WILLING TO LOOK OUT FOR AND REPORT ANY MIGRANT INSECTS WHICH MAY BE IN YOUR DISTRICT? IF "YES" WE WILL FORWARD YOU RECORD CARDS. IF ALREADY DOING SO, SAY "YES" AND WE WILL NOT SEND CARDS.	
12	SUGGESTED NAMES FOR THE CLUB:- A THE ENTOMOLOGICAL EXCHANGE & CORRESPONDENCE CLUB B THE ENTOMOLOGICAL CORRESPONDENCE CLUB C THE SOCIETY OF ENTOMOLOGISTS D THE SOCIETY OF AMATEUR ENTOMOLOGISTS E THE AMATEUR ENTOMOLOGISTS' CLUB OTHER SUGGESTIONS WANTED. PLACE THE ABOVE IN ORDER OF POPULARITY	(NOS1...5)

THE MORE COMMENTS AND SUGGESTIONS WRITTEN ON THE BACK, THE BETTER

B. A. C.; A. N. B.

THE JOURNAL  
of the  
ENTOMOLOGICAL EXCHANGE AND CORRESPONDENCE  
CLUB

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No. 11.

September 1936.

EDITORIAL.

B. A. COOPER,  
61, Okehamptom Road,  
LONDON, N. W. 10

A. N. BRANGHAM,  
9 Litchfield Way  
LONDON, N. W. 11.

Dear Fellow-members,

Now that summer is beginning on the declining course, although the weather would indicate that it was just in its infancy, the evenings are drawing in, and the mists and the first frosts of autumn are upon us, the entomologist feel that he has time now to cease from the toil of collecting to examine his observations and catches. We would therefore once more ask members to send us their notes on the joys they have experienced during the season, of the catches they have made, and of any unusual facts they have noticed, before they become but dim memories of the past. We would be particularly grateful for notes of Members' captures, not merely rarities or holiday catches which might be of special interest to the writer, but general accounts of the season as a whole.

Articles by the senior members of the Club on the different aspects of collecting presents but one topic of interest and value to the younger members. We are sure that any notes sent by those who have been abroad, dealing with the problems set by insects in other climes would be heartily appreciated by all, as would any remarks on the breeding of the more interesting ones in captivity in Britain. It has been suggested that from time to time we publish the titles of articles to appear in later numbers of the Journal in the hope that members would send us their views in advance. Such articles would, in all probability, be more complete. This strikes us as being an excellent idea, and we hope that members will respond to it, in the same way that many have responded to the Queries section.

But enough of appeals. We appeal for notes and articles in every article and every Journal, and we think that this repeated suggestion must have taken its hold on every member's subconscious mind!

We should like to take this opportunity of thanking members for the very helpful way in which many returned their ballot forms with many comments and useful suggestions. We anticipate the rest in the near future with further ideas for the benefit of the Club. Please remember that all forms should be returned to Mr. Brangham.

From now on, the subscription will be 3/6 per annum, for which the editors will produce 9 or 10 Journals, depending primarily on the articles forthcoming and the advertising of Exchange & Wanted. To square up on the year, we propose to charge 6d. per Journal received. We propose issuing two further Journals subsequent to this one, until the end of the present year. Those whose subscriptions now become due, please note! The annual subscription should be paid within the first three months of each year. That is fair enough, isn't it? Certain members who have not yet paid up and who have been receiving Journals for some time, must let us have their subscriptions immediately, as the Club cannot afford to send out free copies plus postage. Unless this is done at once, there remains no alternative but to strike their name off the list.

We wish you all a successful campaign with larvae and imagines in the autumn.

Yours sincerely,

B. A. COOPER,  
A. N. BRANGHAM.  
Hon. Secs. and Editors.

THE E.E.C.C. BALLOT  
PRELIMINARY REPORT

Twenty ballot forms have been returned up to the time of going to press, and we are consequently able to make but a preliminary report, and we hope that by next month we shall have received 100% of the Clubs opinions.

Questions 1 & 2:- With one exception, all have voted in favour of raising the subscription to 5/- so that we may have monthly magazines. Mr. Tesch will no doubt be surprised at this result as he forebodingly predicted that it would be wisest for the Club as a whole to stick to the 3/6 subscription, as the members would object to its being raised. The Editors are of the same opinion as Mr. Tesch, in so far as we think that the subscription should be left as it is. 5/- might quite easily be beyond the means of some of the younger members, and those whose income at times may be strictly limited. We should like to add the rider that members are urged to give a little more than the 3/6, if possible, and not otherwise, so that you are not prevented from giving either 3d. or 6d. extra. It is our duty, however, to serve the needs of every brother entomologist, yet we would like to remind you that the financial resources of the Club are very low, particularly now that the Journal is being produced on a more elaborate scale. Our suggestion is voiced by Mr. Kennedy, "Might I suggest a 3/6 minimum, making it clear that this is insufficient, and leaving it to those who can afford it to add their bit to this minimum." Oh, this capitalist system! Another suggestion is that we should reprint from time to time various groups of articles from past Journals, similar subjects being placed together for easy reference, and retail these at a price above their original cost, with postage extra. More work for us, but we are willing if there is a response! Mr. Capener remarks, "I think 5/- would be a fair sub. for all members, English and Foreign. Don't agree with charging foreigners more as they help to make the Club more attractive!! Agreed, Mr. Capener, but the Post Office thinks otherwise; Journal No. 10 cost us 2d. to USA and 4d. abroad.

Mr. Briden suggests that members should be invited to give a donation forthwith to enable us to purchase our own duplicating apparatus, or to pay our way until the next subs. are due. Hear, hear!

Eng. Comdr. Stidston suggests that boys and those who cannot afford 5/- be charged at old rates. Other members make similar comments.

Member No. 39 puts "Yes" to both Questions 1 & 2. We take it that he does not mind which is settled on.

It seems to be a general consensus of opinion that monthly Journals are wanted as this helps to keep the Club "alive." We feel sure, though, that nine summer Journals would suit most collectors and exchangers. Perhaps we can compromise by issuing a news-sheet of the most important communications, during the months when the Editors decide to be lazy. Postage must be taken into consideration.

Question 3: Everyone is agreed that members shall provide a stamp when desiring a reply other than through the Journal. One member states that it is difficult to see what enquiries could be made which would require the Editors' reply direct. We can assure this member that we often send replies which cannot be printed in the Journal!

Question 4: Everyone is agreed that the years' sub. must have been paid by March 31st. One or two suggest January 31st., but we foresee difficulties of exhausted pocket-money amongst the junior members.

Question 5: Once more, all are agreed that a defaulting member shall receive no further Journals unless we have definite evidence of interest. Mr. G. Nicholson says that members who have not paid their sub. by the end of March and who have not given any notice of resignation should be held responsible for this sub. after that date (save new members). If no further Journals are sent, there is less possibility of obtaining this subscription. Is this sound psychology?



Mr. Stidston agrees with the remark that non-payment of subscriptions would show lack of interest. On the other hand, however, there is often a period of apathy amongst school-boys towards bug-hunting, as with most other interests. This phenomenon is chiefly noticeable in winter when the necessary stimuli are lacking.

There are still a few members who have not paid up yet, and we propose to bring this rule into immediate effect.

Questions 6 & 12: Our method of marking the voting of the titles for Club and Journal is to add up the numbers given for each name, the favourite being the one with the smallest total. Suggestions will be borne in mind by the Editors when making the final decision which may not be quite the same as the popular vote. The results will be published in the next Journal.

There appears to be a wide divergence of opinion as to a suitable name of the Journal. The present name is placed either first or seventh by most members, the latter having the majority up till now. The "Entomological Journal," the "Entomologists' Bulletin" are the favourites with the "Entomologists' Journal." Mr. Tesch, who places the "Bulletin" first, remarks that it seems to have a slight American flavour. "Journal" may sound rather like a collection of scientific treatises. Mr. Tesch also likes the "Journal of Insect Life" very much, as it covers the whole scope for which the Club was originally founded, but other members differ.

Suggestions have been varied, as for example, "The Teschian Fraternity of Entomologists." Mr. Capener would prefer simply "Insects" or "Insect Life." Mr. Stidston would stress the fact that we are an outdoor man's club and not a laboratory man's; therefore a suitable title would be "The Journal of the Field Entomologists' Correspondence Club." Messrs. Head suggest "The Journal of the Entomologists' Fraternal Club" as being out of the ordinary. Apt, yes, but would it attract new members? Mr. Greig would like it called a "Magazine."

Members seem more decided on a title for the Club. The "Society of Amateur Entomologists" and "The Amateur Entomologists' Club" are at present leading the field with "The Entomological Correspondence Club" a close third. "The Amateur Entomologists' Society" is a very reasonable suggestion. Then comes Mr. Rollason's Entomological Correspondence and Exchange Club" and Messrs. Heads "Entomologists' Fraternal Club." Mr. Briden prefers "The Entomological Exchange and Correspondence Society." Mr. Pow finds "Society" or "Association" preferable to "Club" as the latter implies a meeting place or premises, as well as committee and office-bearers. Mr. Stidston supports the "Field Entomologists' Correspondence Club." Mr. Glanfield wants us once more to form an Entomological Society."

Several members feel that the amateur status of the whole thing should be given prominence in the title, as otherwise there is little to distinguish it from the other more learned entomological journals and societies. Many amateurs and beginners are undoubtedly scared by such.

Only two are dissenters to the suggestion that we should continue as a Club or Society; neither give any reason for this. Both however, suggest amended titles for the Club! We take this to be a hasty oversight!

Many agree that the Club should have a committee, but not till later on. A few find this altogether unnecessary. The wide dispersion of our members would make a successful general meeting impossible. The committee should be in a position to meet when desired, and this would be confined to those living in and about London. Mr. Stidston proposes Mr. Tesch as President or Chairman with the two Hon. Secs. as officers of the Club to form a committee when considered desirable. The Hon. Secs. would be pleased to second Mr. Stidston's proposal of Mr. Tesch's Presidentship, but Mr. Tesch has expressed his desire to remain an ordinary member. Perhaps he will reconsider his decision in the near future.

One of the main advantages of a committee is that, supposing the usual compilers were on holiday or ill, one or more members

of the committee would be able to carry on the Journal. At present, any such event means the suspension of activities - a very unsatisfactory state of affairs. There is much to be said both for and against having a separate treasurer.

Most of the members appear to have heard of the Club through the mysterious medium called "friend". This does not help us very much in deciding what methods to adopt for advertising and publicity. Perhaps "friends" would care to inform us of the primary source of introduction. No further suggestions for advertising have been received. The Exchange and Mart seems to be the most helpful, although we are engaged in seeking out other methods of attracting members with as little expense to the Club as possible.

Eleven members have declared their willingness to record migrant insects as far as they can. Two more leave the question blank. We shall forward the record cards soon.

Only one member has mentioned the purchase of copies of the booklet "British Immigrant Butterflies and Moths." Perhaps this will remind others.

Two junior members suggest that the Club should consider the production of a badge so that members might recognise each other. This strikes us as being hardly worth while until our membership runs into the hundred thousands! Members can easily get in touch with one another, as lists are supplied periodically, and we would encourage members to visit their co-entomologists as often as possible. This is where Eng. Comdr. Stidston's Dinner and General Meeting would be useful.

Other notes include suggestions for articles, which, we conclude, are to be written by the Editors! Several writers point out that simplicity should be our watchword in compiling the Journal, if we wish our membership to increase.

Our last words are to remind those who have not yet returned the completed ballot-sheets, to do so as soon as possible.

B. A. C.

A. N. B.

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#### MIGRANT LEPIDOPTERA.

Migrant lepidoptera are found in all hot and temperate parts of the world and can be divided roughly into seven classes:-

1. Those which migrate within the boundaries of one country or district (i. e. short distances),
2. Those normally resident in a district but whose numbers are augmented from time to time by immigration from abroad,
3. Those resident in a district whose numbers are reduced by emigration,
4. Those resident in a district which produce offspring there, but which soon die out, usually during the winter.
5. Immigrants which die without producing a single generation of offspring,
6. Individuals in passage only, which may or may not breed en route,
7. Permanent residents and also passage migrants.

For the purposes of our investigation, however, these have been reduced to three classes:-

Class A. Regular immigrants which cannot normally maintain themselves in the climate of the British Isles.  
(Records desired of all specimens seen).  
*Vanessa cardui* (Painted Lady),  
*Vanessa atalanta* (Red Admiral),  
*Aglais urticae* (Small tortoiseshell),  
*Nymphalis io* (Peacock).

These two common residents may migrate occasionally, and are added for control.  
*Colias croceus* (Clouded Yellow),  
*Colias hyale* (Pale Clouded Yellow),

*Acherontia atropos* (Death's Head Hawk Moth),  
*Herse convolvuli* (*Convolvulus Hawk*),  
*Macroglossum stelatarum* (Humming-bird Hawk),  
*Plusia gamma* (Silver Y),  
*Monophila noctuella* (Rush Veneer).

This is a very important small moth.

Class B. Resident species which may be reinforced by immigration. Only records of observed migration or presence in abnormal quantities required:-

*Pieris brassicae* (Large White Butterfly),  
*Pieris rapae* (Small White),  
*Pieris napi* (Green-veined White),  
*Sphinx ligustri* (Privet Hawk Moth),  
*Euproctis chrysorrhoea* (Brown Tail),  
*Leucoma salicis* (White Satin Moth),  
*Tyria jacobaeae* (Cinnabar), (possible emigrant),  
*Agrotis ipsolon* (Dark Sword-grass),  
*Agrotis saucia* (Pearly Underwing),  
*Agrotis c-nigrum* (Setaceous Hebrew Character),  
*Triphoea pronuba* (Large Yellow Underwing),  
*Cerapteryx graminis* (Antler),  
*Xylophasia monoglypha* (Dark Arches),  
*Phlogophora meticulosa* (Angle Shades),  
*Caradina alsines* (The Uncertain),  
*Heliothis peltigera* (Bordered Straw),  
*Cidaria obstepata* (The Gem),  
*Ennomos quercinaria* (August Thorn),  
*Bupalus pinaria* (Bordered White),  
*Hapalia ferruginalis* (Rusty Dot),  
*Plutella maculipennis* (Diamond Back),

Class C. This class is made up of insects which have strayed far from their normal habitat and are generally very scarce. Records are desired of every wild specimen found, in any stage of metamorphosis. Before communicating information about rare stragglers, local lepidopterists should be asked if the species is being artificially liberated.

*Danaus plexippus* (Milkweed, Monarch, or Black-veined Brown),  
*Argynnis lathonia* (Queen of Spain Fritillary),  
*Nymphalis antiopa* (Camberwell Beauty),  
*Cosmolyce boeticus* (Long-tailed Blue),  
*Everes argiades* (Short-tailed Blue),  
*Pontia daplidice* (Bath White),  
*Celerio euphorbiae* (Spurge Hawk),  
*Celerio galii* (Bedstraw Hawk),  
*Celerio livornica* (Striped Hawk),  
*Hippotion celerio* ((Silver-striped Hawk),  
*Deilephila nerii* (Oleander Hawk),  
*Utetheisa pulchella* (Crimson Speckled),  
*Crymodes exulis* (Northern Arches),  
*Leucania unipuncta* (American, or White Speck Wainscot),  
*Leucania loreyi* (Cosmopolitan Wainscot),  
*Leucania l-album* (White - L Wainscot),  
*Leucania vitellina* (Delicate Wainscot),  
*Laphygma exigua* (Small Mottled Willow),  
*Heliothis armigera* (Scarce Bordered Straw),  
*Plusia ni* (The Ni Moth),  
*Plusia intergradationis* (Scarce Silver Y), (possible emigrant),  
*Catocala fraxini* (Clifden Nonpareil),  
*Rhodometra sacraria* (The Vestal),  
*Ennomos autumnaria* (Large Thorn).

One of the most sought-after of British immigrants is the Milkweed Butterfly. It is not known to breed in Europe, yet nearly every year one or more specimens are taken in England, Wales, and Ireland, and nearly always in the autumn. This insect is common in North America where it flies south in the autumn in

enormous flocks, returning again, (at least the females), singly in spring. It has, in the past, been held by most people that these must have been blown across the Atlantic, whereas, as pointed out by Charles Nicholson (Entomologist LXVIII 269-273), it is astonishing that so few specimens have been recorded from western-most Britain, namely, Ireland. The fact that nearly all records are from south and west England, Wales, and Ireland seems to point towards a flight via land from the very much nearer Canary Islands, where the species is stated to have been abundant last October. Owing probably, to the absence of observers, it has rarely been reported from western France, Spain, and Portugal. Another popular theory is that the insects have been carried over by fruit boats, and other ships. Since there is evidence which would tend to prove each of these theories to be right, it is possible that each may account for the arrival of a few of our specimens.

The Painted Lady Butterfly, The Silver Y, and the Rush Veneer, are remarkable from the fact that they have many times been observed to migrate together, though, as would be expected, each migrates alone as well. These arrive in England as a rule in May, and June, but migration takes place throughout the year, and in various directions. In spite of the difference in their sizes and modes of flight, it appears that all three may cross the Mediterranean together, and frequently arrive on British shores at the same moment. All three have been found abundant in Egypt, but, like many other migrants, they have an almost universal distribution. It may be added that records are urgently wanted to find out if specimens of the Painted Lady or the Rush Veneer return south later on, as the Silver Y has been observed to do.

*A. urticae* and *N. io* are well known as common residents in this country, but there is slight evidence that these may occasionally immigrate into the country from abroad.

The three common whites of Britain (*Pieris rapae*, *napi*, and *brassicae*) are also regular residents, but large swarms are quite often seen invading the country. Whether their hymenopterous parasites migrate at the same time has not been ascertained, but as the immense numbers are speedily reduced in the course of a generation or so, it seems very probable. In Britain, they appear to have been observed usually flying NW, W, and SW, but in many parts of the continent they have been seen flying due S on many occasions. Whether this is due to climatic conditions or to a possible return flight remains to be determined.

The Bath White is a rare visitor to these islands, but it is possible that it may have occasionally been passed over owing to its resemblance to the Green-veined White, which is common everywhere. The former has never yet been bred in England from wild English young though a freshly emerged specimen has once been recorded.

The Clouded Yellow and Pale Clouded Yellow arrive here during the late spring and lay eggs which develop a home-bred generation in August. Specimens may sometimes appear in small numbers in mild sheltered spots which are descendants of previous years' British stock, but these are very rare. Immigration is even more common in the autumn, but there is very little evidence which would point to a possible return flight. The migrations of *C. croceus*, and *C. hyale* are quite unconnected.

The Camberwell Beauty arrives on our shores from the east, in all probability from Scandinavia. It is common in Europe but though specimens appear which must have survived the winter in England, no British offspring are known to have resulted.

With regard to moths, the night-flying habits of these insects make observations on their migrations very difficult. Here, the evidence of migration is mainly based on sudden appearances after long periods of absence, at lighthouses, lightships, and vessels at sea, and an occasional mass flight.

The Death's Head Hawk Moth is a regular arrival in spring and early summer. It is doubtful whether it even survives the winter



in the pupa stage in the British Isles. Both larvae and pupae, however, are met commonly by potato diggers in the south and east of England in the autumn.

The Humming-bird Hawk in some years is exceedingly abundant throughout England, Wales, Ireland, and even Scotland, while in others hardly a specimen is observed. The conspicuous day-flying habit of this moth renders it more easily observable than is the case with other species, though it is often met with, flying at dusk, and has even been taken after dark. It is thought that the imago of this species may occasionally survive the winter in this country.

The larvae of several of these migrant insects are notorious pests, of economic importance, at least in the land from which they emigrate. *Laphygma exigua*, luckily rarely common in Britain, is a destructive pest in Asia and especially India, to crops of indigo, maize, and other sources of wealth. It is the "Boot Army worm" of American notoriety, while in South Africa it is known as the "Pigwood Caterpillar."

*Agroctes ypsilon* (The Dark Sword-grass or "greasy cut worm"), is a pest which appears in Egypt in the autumn in small numbers, and after two or three generations in winter, it swarms in immense numbers in March and April. Then one day, all are found to have disappeared, apparently bound for some unknown destination, presumably to the north.

The well-known migrant, *Plusia gamma*, has often been recorded as seriously injuring crops. The larvae of *Vanessa cardui* have on many occasions been known to ruin fields of artichokes in the south of France, and other crops in different parts of the world.

Apart from the well-known destructiveness of the whites, the Diamond-back Moth (*P. cruciferarum* or *maculipennis*), a small micro., is an occasional immigrant which crosses the North Sea from the Continent, and becomes a pest in cabbage fields.

A very large number of pests of economic importance have been shown to be migrants, apart from those examples mentioned, and it seems probable that others, at present unsuspected, may, later prove to be similar.

It is for this reason that we welcome records from all parts of the world, and of orders of insects other than lepidoptera, as further study of these may cast light on the as yet unsolved mystery of migration, which would otherwise be completely missed.

K. CLARKE and B. A. COOPER.

#### PLUSIA GAMMA (SILVER Y MOTH).

It has been reported that this summer's large immigration of *P. gamma* has included specimens which have been taken at sugar. Since this is rather an unusual occurrence, perhaps members could tell us their observations on this subject.

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#### A NEW FOOD-PLANT OF THE HOLLY BLUE. (*CELASTRINA ARGIOLUS*)?

Mr. Capener sends the following note on the Holly Blue Butterfly:- "I have just seen (August 17th, 1936) a female ovipositing on the calyces of a shrub in the gardens here (Weymouth). The name sounds like 'Clewitia' (but the gardener didn't know how to spell it). I am enclosing a seed-pod and flower - perhaps you know it? The leaves are very much like laburnum. A new foodplant? The shrub grows well and would be an ornament to any garden, so perhaps it will come into favour amongst those who breed this species, instead of the usual holly-ivy combination."

Mr. Cooper has established the identity of this plant as undoubtedly being a species of *Cassia*, commonly known as the Bladder Senna. Since there are one or two plants of this in Mr. Capener's district, he will be pleased to send ripe seed-pods of this to any-

one desirous of growing this shrub as an experiment. Meanwhile, we hope Mr. Capener will breed the ova he saw laid, and in due course report to us whether he considers this pabulum suitable, or merely a chance mistake on the part of the parent butterfly.

#### ANSWERS TO QUERIES.

No. 19:-- Mr. W. E. Dale writes as follows:--

"You may be interested to hear that an elderly man I know who lives near here, (a professional setter), has a male *G. rhamni* (Brimstone Butterfly), caught some time during April this year, which is still alive, August 13th., and feeds daily from an ordinary cotton-wool pad, sugared lightly and pinned on the side of the box. This same person has a passion for *V. io* (Peacock Butterfly) and the last time I visited him, he had one 15 months old (in the imago state) and still going strong. He tells me that he has never used other than the sugar pad for 40 years - that should be a long enough trial of this method."

No. 20:-- "A few years ago I kept a dozen or so *Cicindella campestris* (Common Tiger Beetle) in a large insectarium for several months. They were continually pairing, which surprised me, as I had always thought insects mated but once, but there was no shadow of doubt about it. Only once did I see a female laying - she thrust her abdomen about a sixteenth of an inch into the sand, leaving a tiny pit. I searched for the egg, but failed to find it, so I might have been mistaken in thinking that she had deposited an egg."

A. L. Capener, 23/7/36.

I have often noticed the same with other coleopterous insects. Definite preparations seems to have been made for depositing an egg, but I was not able to find it. Is it possible that beetles do not always lay their eggs immediately after preparation, but return later to complete the job?

A. N. B.

No. 21:-- Most moths and butterflies pair more than once, at least in captivity. They lay fertile ova in between the periods in copula. Infertile ova are probably very rarely laid in the wild, but quite regularly by many species in captivity. I do not think, however, that *E. polychloros* (Large Tortoiseshell) is one that does this. Possible causes are either an under- or over- amount of moisture or sunshine, causing drying up or fungoid infestation, or more probably, small hymenopterous insects of the Prototryptidae, which undergo the whole of their metamorphosis, sometimes several together, inside ova. Other possible sources of trouble are earwigs, lacewings, centipedes, or slugs.

After examining the eggs, however, I am not left with much doubt that the causes were infestation by small hymenopterous parasites. The round holes in the top of the eggs certainly were bigger than is usual with these insects, but so regular as to put the suggestion of ants or slugs right out of the question. At the same time, it may be noted that one or two eggs showed not the least sign of any infestation, and yet had not hatched.

B. A. C.

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#### QUERIES.

No. 21:-- (See Mr. Cooper's reply above).

Do butterflies as a rule lay eggs if infertile? I ask, because on April 28th. last, I caught a female *E. polychloros* (Large Tortoiseshell) and sleeved her on an elm sucker. She laid about eighty eggs by May 2nd. I kept them sleeved and watched carefully, expecting them to hatch in about a fortnight. Nothing happened!

For six weeks they remained the same and did not shrink. Then I removed the muslin and shortly afterwards found the shells partly destroyed - I think by ants. I forget to mention that the female was rather worn and I should have said that she was surely mated.

A. L. Capener. 23/7/36.

No. 22:- It is a common observation that the males of most species of lepidoptera emerge before the females. Have any members found it worth their while picking out the larger female pupae and "forcing" them gently so as to have them in a pregnant condition when the males emerge? Or will the males of most species only mate after having attained a fair age? This is a matter worth looking into, as members have several times complained of loss, apparently caused thus, despite adequate feeding arrangements. It is hardly likely that this occurs in nature, though a surfeit of one or other sex (usually male, for some reason or another) often takes place. Another curious fact which would tend to complicate matters is that those species which spend a short period in the pupa, as well as a proportion of others, the females emerge with undeveloped or only slightly developed ovaries, but with highly developed fat bodies. The ovaries develop slowly at the expense of the fat body, thus requiring time after emergence before fertilisation can take place. It is interesting to note in passing that species which hibernate as imagines do not mate till spring. There are cases on record of sexually mature larvae and even of pupae that laid eggs! Perhaps Messrs. Head, with their long experience of breeding lepidoptera, will be able to explain this point to members.

B. A. Cooper.

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NOTES ON A SPIDER PARASITE  
believed to be  
*Colpomeria quadrisculpta*.

By sweeping birches in Knighton Heath Wood, Dorset, on May 9th., three specimens of a small spider, *Epeira curcubitina*, were obtained, each carrying a larval parasite.

Each grub was fixed by its anal end to the spider's abdomen, between it and the cephalothorax, the head end coming round to the top left side, where it apparently pierced the skin and sucked the juices of the spider.

One specimen was accidentally crushed, but the other was successfully reared. The spider was found dead on May 16th., and the grub quickly consumed all but the hard parts - this draining process taking about a day. The grub was then about 3/8 in. long and 3/32 in. wide. It spun a light cocoon. The change to the pupa was very gradual, but on the 23rd. the shape of the head, thorax, and abdomen and legs could be distinguished. Various portions then turned to a lead colour, and finally black. The tarsi and wings were the first parts to darken. On June 6th., the pupa had become more generally pigmented, but the underside of the abdomen was still a cloudy white, the femurs and tibiae being reddish-brown. As far as could be seen through the cocoon, legs, wings, and antennae were quite free. Throughout its development, the extremity of the abdomen was much curved, and this is a feature of the perfect insect. During its metamorphosis, it was very active in revolving inside its cocoon if disturbed in the slightest. The perfect ichneumon emerged on June 7th.

The fate of the other specimen was different. On May 14th. the spider cast its skin, but this did not dislodge the grub only causing it to change its position, so that it hung centrally down the spider's abdomen. It soon resumed its normal position. On May 20th the spider was still alive and active, and did not show any discomfort, although the

grub was increasing in size. On the 22nd., the spider died. This may have been caused by the pressure of a cover glass during microscopic examination on the previous evening.

I assumed the spider was dead but it is possible it had become paralysed. The grub did not appear to be full-grown, so, fearing it might die, I carefully removed it to a very small tube with another spider of the same species, hoping it would attach itself to a new host. After a couple of hours with no result I gave it up as a bad job, and preserved it instead.

I am indebted to Mr. G. J. Kerrich for naming the specimen as to Genus (*Colpomeria*). The specific name - *quadrisculpta* - is not definitely settled yet.

A. Capener.

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#### SWARM OF LARVAE IN THE LAKE DISTRICT.

The following cutting, taken from the "Daily Herald" of June 30th., 1936, may be of interest to members.

"DINNER TABLE MOUNTAIN. Millions of caterpillars covered the slopes of High Pike (2,157 feet), the highest of the Caldbeck Fells, Cumberland, yesterday.

"Seagulls from the Cumberland coast, 21 miles away, located them, settled in swarms on the mountainside, and proceeded to feast themselves."

Perhaps some members may be able to enlighten us on what species these belonged to. Probably they were the larvae of *Cerapteryx graminis* (The Antler Moth), which often swarms, especially after a mild wet winter or spring, the multitudes of caterpillars causing considerable damage to large areas of grass-land. In Britain this species is most common on the grass-clad hills and mountains of Northern England, Wales, and Scotland, but it also occurs, often abundantly, throughout North and Central Europe to Eastern Siberia. It also occasionally becomes a pest in Iceland. Edward Newman, (*British Moths* 1869, pp. 293-4) quotes a striking account of the devastation caused by this moth on the lower slopes of Skiddaw, near Keswick, Cumberland, which all members should read.

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#### CALENDAR.

On Mr. Dale's suggestion, we propose, during the summer months, to give notes on items to be looked for, at that season. We should be very glad to hear from any members who would volunteer to periodically fill a portion of this section, whether lepidoptera, coleoptera, or any other order.

September lepidoptera:- Now is the time for larva collecting. Trees of all kinds may be beaten over an inverted umbrella or beating tray, and bushes and hedges should be carefully searched, especially along twigs, and on the undersides of leaves. Many species of lepidoptera may be obtained by pulling aside clumps of *Polygonum*, *Chenopodium*, chickweed (*Stellaria*), cleavers (*Galium aparine*), as well as other bedstraws (*Galium*); the larvae will be seen on the ground beneath the plants, having just dropped from their perch. The season for searching hedges and meadows by night with a lamp once more commences in real earnest, and many interesting species may be found in this way. Many *Eupithecias* (Pug Moths) will be taken commonly feeding on flower-heads by night. The sweep net may be used to advantage, especially among grass and heather. Searching and beating bramble is said to be good, but I have yet to learn this art. On the underside of dock-leaves will be found a large number of larvae, many



of which also occur in gardens on *Digitalis*, *Lupinus*, *Verbascum*, and other plants.

B. A. C.

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#### IMPORTANT NOTICES.

Mr. N. D. Riley, Keeper of the Department of Entomology, British Museum (Natural History), Cromwell Road, London, S. W. 7., states that his department is most anxious to obtain parasites, particularly hymenopterous parasites bred from known lepidopterous hosts. Anything of this kind members care to send, should be addressed to Mr. J. F. Perkins, Department of Entomology, etc. Since so many thousands of these are bred annually by members who usually reward their captures with extermination and hard words, we feel that members should make an effort to send any they may breed or come across to the British Museum, where they will be of the greatest scientific importance. These should be accompanied by all data, wherever possible.

One more matter concerns lepidopterous larvae. For the past two or three years the British Museum has been trying to build up a collection of these in spirit, already having most of the commoner species in limited numbers. They would be most grateful for any help which members might be able to give, particularly with the more local species in any stage. They should be addressed to Mr. N. D. Riley personally, preferably alive, as this overcomes the difficulty of sending spirit material through the post.

Captain T. Dannreuther, R.N., "Windycroft," Hastings, to whom all our migration records eventually are sent, specially requests that members shall not send their records to us, but direct to their County Recorder; this does not apply to the Home Counties in direct touch with the committee or the Royal Entomological Society (this refers to London, Surrey, and Sussex records), which can go direct to his own address, given above, as for foreign records. Lists of county recorders will be sent to those who are interested, together with record cards, if this has not been done already.

Captain Dannreuther has been very helpful indeed to the Club, and has most kindly offered to check over and comment on the suitability of any articles on migration which we intend publishing. We thank him also for sending his committee publications, for which the copyright is waived, but we would state that we should prefer to print our own articles, even though this should necessitate the taking of facts from these. We hope that he may be repaid by many useful records from our members.

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#### CURRENT NOTES.

On August 30th., 1936, B. A. Cooper found a 3/4 grown larvae of *A. grossulariata* (Magpie Moth) feeding on *Euonymus japonica*, a common hedge-plant in London. Every year, for the past three years, he has seen one or two imagines of a second brood during late October or November. These larvae, being beyond the usual size for hibernation, will no doubt emerge as moths later this year.

A single male *Cupido minimus* (Small Blue Butterfly) was caught by B. A. Cooper after much searching on August 8th., 1936, on the Wiltshire downs near Stonehenge. Although this species regularly produces a second brood in July and August on the Continent, it is not very often that specimens are met with at this time of year in England.

Mr. E. W. Classey notes that some *M. athalia* (Heath Fritillary) larvae of his which hatched at the end of June this year and kept out of doors in cool places, have passed the hibernating stage and

appear to be going to produce perfect insects the same year. Messrs. Head, who breed this species in a hot green-house, state that it has never been known to do this in their establishment. Perhaps the hot weather after the cold wet spells reacted on the larvae in the same way as warm spring air would react after hibernation. Or perhaps the larvae will hibernate at a larger stage than is usual. Mr. Cooper, who also has some larvae of this species kept out of doors but which hatched some-what later than Mr. Classey's, notes that they are behaving quite normally.

B. A. Cooper also states that he found some of this species on August 31st., which had escaped from a breeding cage while he was on holiday. They were feeding on *Catananche coerulea* in his garden. A colony of eighteen was also found thriving on mullein, *Verbascum nigrum*. As far as he is aware neither of these have previously been recorded as foodplants. They are still being used as such.

Messrs. Head record that both large and small elephant hawk moths (*C. empenor* and *M. porcellus*) are becoming more common in the Scarborough (Yorks.) district. Four or five years ago it was rare for more than a single specimen of each to be brought to them, but several are noticed per year now.

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#### NEW MEMBERS.

The following two new members are both collectors of le pe doptera:-

Nr. 41. Mr. E. W. Classey, 141, Portnall Road, London, W. 9.

No. 42. Mr. E. W. Dale, 54, Baldwyns Park, Bexley, Kent.

It is not quite certain that the following two new members are collecting. We rather hope that they are probing the mysteries of such insects as the Hemi ptera, or collembola, although Mr. Kuwasima probably collects coleoptera and lepidoptera.

No. 43. Mr. Kenzo Kurasima, P. O. Box 205, Zamboana, Mindanao, Phillipine Islands.

No. 44. Mr. R. J. Robson, 10, Vane Road, Barnard Castle, Co. Durham.

#### MEMBER RESIGNED.

NO. 9. Mr. T. C. Puttick, a non-collector, has announced his intention to resign from the club immediately.

#### CHANGE OF ADDRESS.

Please note that Mr. C. Henderson's new address is:- 124, Knightthorpe Road, Loughborough.

#### PRESENT MEMBERSHIP - 43.

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#### EXCHANGE AND WANTED.

MR. D. Greig,, "Medwyn", Cavendish Drive, Roak Ferry, Cheshire, has for exchange or sale, young *L. quercus* var *callenae* (Northern Eggar) larvae and also East Indian Stick Insects. He would like in exchange larvae of any members of the Sphingidae (Hawk Moths) and *G. que rcifolia* (Lappet Moth).

ERRATA. for "Eng. Comdr. Stidston" read "Engr. Capt. Stidston". (page 2 & 4) for "one or two plants of this in Mr. Capener's district" read "Mr. Cooper's". (bottom p. 7.) for "Monophila noctuella" read "Nemophila noctuella". (top page 5).

THE JOURNAL  
of the  
ENTOMOLOGICAL EXCHANGE AND CORRESPONDENCE  
CLUB.

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NO. 12.

October 1936.

B. A. COOPER,  
61, Okehampton Road,  
LONDON, N. W. 10.

A. N. BRANGHAM,  
9, Litchfield Way,  
LONDON, N. W. 11.

Dear Fellow Members,

The season has now all but come to an end, and most of us have set aside active field work till the coming of spring. Let us, therefore, take stock of what has happened during the past fifteen months of our existence, consider the present, and plan even greater things for the morrow.

Our advance in the world of entomology has not been startling, perhaps, but we as editors and secretaries have every reason to be glad that the Club is in existence at all, after the resignation of Mr. Tesch. Our membership has risen from zero to forty-seven, and the numbers are still rising slowly; we therefore have every hope of passing the half-century before the year is out. We can proudly point to three Japanese members, a Filippino, and one from the United States, so that truly the sun never sets on our domains.

Financially, we are not strong, but we are sound. It is well to remember, though, that the editors are themselves still compelled to pay all postage on Club business, which, by now, is not inconsiderable. The Journal, although really still only in an incipient and experimental stage in order to find the requirements of its members, is gradually finding its feet, and we are doing everything in our power to make it bigger and more informative. Naturally, we have been hampered by our very small income, but we are confident that with patience and imagination, coupled with some schemes for publicity, we shall grow into a large group of individuals with common interests. As editors and treasurers of the Club we can look forward to the year 1937 with confidence, and, incidentally, with easy consciences. That is our point of view.

That of the ordinary member who expects his Journal regularly, who writes occasionally, and gets in touch with a fellow-member is more difficult for us to judge. We have heard, however, that quite a number of members have been able to get into personal contact with others, chiefly through paying visits during the summer holidays. We have also heard of some useful exchanging and entomological correspondence. That too, seems very satisfactory. In future, it will be up to the members to prevent the editors from monopolising the articles.

In conclusion, we should like to say that we have had printed a large number of a revised prospectus, giving the aims of the Club and its Journal, suitable for distribution to any with entomological leanings. We shall be pleased to send these together with a specimen Journal to any members who may be able to make use of them, or to any address where there is someone likely to be interested, particularly if he or she be a beginner.

We wish you a very happy winter season, and - here's to the next time,

Yours sincerely,

B. A. COOPER,  
A. N. BRANGHAM.

Hon. Secs. and Editors.

THE E.E.C.C. BALLOT RESULT  
FINAL FIGURES

A total of thirty-one ballot forms have now been received, the following statistics being derived from them (questions slightly abbreviated):-

	YES	NO POLLS.	NO. OF
1. Are you in favour of raising sub. to 5/- per annum, Journal monthly?	28	3	31
2. Would you prefer sub. at 3/6. with only 9 Journals per year?	3	28	31
3. Do you agree that all enquiries from members desiring reply other than through the Journal should contain stamp for return postage?	31	0	31
4. Are you in favour of subs. being due within first 3 months of year, proportional subs. for newcomers, instead of as at present?	31	0	31
5. Do you agree that no further copies of Journal be sent to members who have not paid by March 31st.?	30	1	31
7. Do you consider the organisation should continue as a Club, and not, since it has no committee and never meets, merely be called a Journal, Magazine, or Bulletin?	26	4	30
8. Do you think the Club requires a Committee?	12	15	27
9. Do you consider the name of this Club adequate as it stands, and not too long?	8	21	29

In marking the following two questions the procedure was to sum up the numerical order of popularity, the lowest, of course, being the 'winner! Any blanks left were given the average of those numbers still remaining. There are, therefore, a number of halves among the figures.

	TOTAL	VOTE
6 A. The Journal of the Entomological Exchange and Correspondence Club	125	
B. The Entomological Journal	90 1/2	
C. The Entomologists' Journal	88 1/2	
D. The Entomologists' Bulletin	76 1/2	29
E. Entomology	150 1/2	
F. The Insect Journal	141 1/2	voted
G. The Journal of Insect Life	138 1/2	
12A. The Entomological Exchange and Correspondence Club	96	
B. The Entomological Correspondence Club	100	28
C. The Society of Entomologists	75	
D. The Society of Amateur Entomologists	67	voted
E. The Amateur Entomologists' Club	67	

11. Are you willing to look out for, and report any migrant insects which may be in your district?  
YES: 20; NO: 3; 7 already doing so.  
30 filled in papers.

10. How did you learn of the Club?	Friend.....15
	Exchange & Mart...11
	Head's lists.....1
	Brit. Mus.....2
	U.S.C.E.....1
	L.R.T.....1



CONCLUSIONS:- Commencing with the first Journal of next year, the Club will be known as THE AMATEUR ENTOMOLOGISTS' SOCIETY. Since the vote was equal on both 12D and E, we decided, because of the absence of any substantial difference of opinion, to adopt the above title suggested by our former secretary, Mr. Tesch. The Journal will be known as THE ENTOMOLOGISTS' BULLETIN. The majority vote to all other questions will be followed, with the sole exception, for reasons stated in our last number, that the subscriptions will remain at 3/6 per annum, 5/- abroad. Record cards and other literature pertaining to migration, kindly sent to us by the South Eastern Union of Scientific Societies, have been posted on to all those who have volunteered to help. No new suggestions have been received as to suitable advertising schemes, so, for the present, we think it would be best if the Club consolidated its present position before inserting more advertisements in any periodicals. May we once more thank those of you who took the trouble to return your ballot forms, and for the useful suggestions contained in them.

16/10/36.

B. A. COOPER,

A. N. BRANGHAM.

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#### LEPIDOPTERA AND BRITISH ANTS.

Apart from the fact that ants form the richest material for experiment and research in the realm of behaviourism and animal psychology, where there is such a simple yet complex social structure, ants are interrelated to an amazing extent with other insects, and invertebrates. In Great Britain alone, where the difference between the habits of one type is not so strikingly apparent as in tropical species, yet we find that each species and every single nest has its host of dependants, parasites, or self-inflicted guests, beetles, spiders, butterflies and moths in their early stages, ichneumons, and flies.

The relationship between these guests and the host ants have been classified for clarity into two classes, that is to say, roughly. They are called active and passive, (extranidal and intranidal). It is in the first class that our interest lies most, as it is under this heading that we find some of the British lepidoptera.

In this category, the relationship between ant and guest is generally one of mutual benefit, known as symbiosis, and the commonest examples are the Aphidae (Plant-lice), the Coccidae (Scale Insects), and the Lycaenidae (Blues). The ants induce the guest or myrmecophile to surrender a certain amount of secreted honey, while the guest in return receives protection - all very much on the American gangster system of "protection". Darwin, in his "Origin of Species," devotes much space to ants in the development of his theory of the balance of nature. His observations in this direction have been confirmed more recently by investigations in economic entomology, particularly in the coffee-growing districts of East Africa. Here, there is a constant war between ants and species of Coccinellidae (Lady-bird Beetles). The ants are the jealous guardians of plant-lice, while the lady-birds are their most ardent devourers. It was found that where the ant did not flourish the lady-birds were able to control the greenfly, with the result that the quality and quantity of the coffee-plant was much greater. In those parts where the coffee-ant held sway, the greenfly was carefully nurtured on the stems, and any raids by the beetles were beaten off. To a smaller extent the same goes on in this country, chiefly on current bushes and rose-plants.

For the economic entomologist, the association of ants with lepidoptera is not of much importance, but to the collector, the relationship of the Lycaenida in particular, is of interest, because the mystery has only just been cleared up,

and because the number of the Blues living with ants are distinctly small.

The Lycaenidae are placed in the second category of Wassmann's classification. He calls them "Honey Caterpillars" of which there are sixty-five species, representing twenty-eight genera throughout the world, which associate themselves with the Formicidae, and, as I have pointed out before, their relationship is an active one. I give the description of the caterpillar from Mr. H. St. J. K. Donisthorpe's book, "The Guests of the British Ants! He says: "These caterpillars are somewhat depressed, with rounded anterior and posterior ends, and Guénée discovered, in 1867, that they possessed three peculiar organs - an unpaired gland in the middle of the back of the eleventh segment, and a pair of short tentacles, which can be protruded, on the twelfth segment. The median gland can also be protruded through a transverse slit, and each of the tentacles is fringed at the tip with a close fringe of stiff feathery hairs. The ants caress the posterior end of the caterpillar with their antennae, as they do to a plant-louse, and it emits a droplet of colourless liquid, which is sweet, from the median gland, which is eagerly imbibed by the ants. The benefit gained by the relations between these larvae and ants is mutual, for the latter obtain sweet secretion, of which they are very fond, by milking these larvae (trophobiosis), and the caterpillars obtain protection against their natural enemies, by the presence of the ants. The function of the tentacles of the larvae is unknown, though it has been suggested that they may give off an odour to attract the ants!"

Donisthorpe also remarks that some of the Lycaenidae larvae have been observed to eat the ants' coccidae and aphides, as well as devouring the ants' own brood. There is consequently a likelihood of an "eternal triangle" relationship between the ants, the aphidae, and the Lycaenidae.

*Agriades coridon* Poda. (The Chalk-Hill Blue) favours the company of *Acanthomyops flavus* the little yellow meadow ant which throws up the green hillocks in nearly every meadow, and chiefly wherethe soil tends to be moist and clayey. As far as I can discover, *A. coridon* was first recorded in this country in the year 1906 on June 18th. A number of the nearly full-grown larvae were feeding on plants of *Hippocrepis comosa*, on the hillside, near Reigate, Surrey. Here I must point out that the nature of the soil in this part of the country is essentially chalk, but I have noticed that, under such circumstances, the colonies of *A. flavus* are neither so abundant nor so prosperous-looking as in moist clay soil. These larvae were all being attended to by the yellow ants; on some plants as many as twenty ants were stroking one larva. Mr. Rayward counted these, and also noticed that the ants stroked the posterior glands of *coridon*, until it became extended and exuded a drop of the clear sweet liquid. He remarks that some ants found their way to the larvae more quickly than others.

When Donisthorpe placed some *coridon* larvae into entirely strange nests of ants, who would not have met with this species of caterpillar, and who would have normally devoured any meat which came their way, they took the larvae and tended them in much the same way as the *A. flavus* ants would have done. This was observed with species of *Formica rufa* (Wood Ant), *Formica fusca* (Slave Ant), *Formica sanguinea* (Slave-making Ant), *F. exsecta* (Narrow-Headed Ant.)

It has also been noticed that some ants go to the extent of erecting earth mounds around the larvae, as is so frequently done with the aphids, or ant-cows.

Mr. Rayward also took specimens of *Agriades bellargus* (Adonis Blue) at Folkestone, this time attended by *Acanthomyops niger* (The Brown Garden Ant).

*Polyommatus icarus* (Common Blue) also yielded its contents to *A. flavus* when under observation.

As regards *Lycaena arion* (The Large Blue), I shall again quote from Mr. Donisthorpe's book: "Most species of Lycaenidae hibernate as caterpillars in their third instar (they moult four times, and thus have five instars or larvae-skins), but some hibernate as full-grown and full-fed larvae, others as pupae, and others again in the egg stage. *L. arion*, however, does none of these things, and a number of observers had endeavoured, without success, to complete the

life-history of the Large Blue; and many suggestions had been made as what became of the larva during its fourth instar, when in August, it leaves the wild thyme, on the flowers of which it chiefly feeds, and goes into hibernation. It was not, however, until 1915-1917 that, through the patient investigation of Chapman, Frohawk, and Purefoy, the problem was finally settled. They fixed up observation nests of various ants, both in confinement and at large....and they found that the larva only moults three times, the fourth instar being its last (this was discovered by Frohawk, who also first found out that this larva lived with ants) and that it passes the winter in nests of *Myrmica scabrinodis*, *laevinodis*, and devours the ants' brood.

"What happens is briefly as follows:-

"When the larva leaves the thyme it wanders about until it meets, or is met by, an ant, when it is probable that it will be milked by the latter. The ant may not do so, and other ants may come up and milk the larva, but, according to Purefoy, it is always the ant that found the larva first who carries it into the nest. After milking the larva the ant walks round about it, and evidently some sort of signal is given by the ant (Chapman), or by the larva (Purefoy), when the larva hunches itself into an extraordinary shape - the head is much retracted, the thoracic segments swell up, and the posterior segments become very narrow in consequence, and the ant seizes it behind the thorax and carries it into her nest. Here the larva does not appear to attract much attention; it seeks the chambers where the ants' brood is thickest, and rest among them. it devours very many of the ants' larvae, and grows rapidly. When full-grown it spins up and pupates in the galleries of the nest, and the imago emerges in June."

Arion is found only in Somerset, Devon and Cornwall now, so that observations are limited to entomologists in these counties or to those who have the good fortune to be able to spend some weeks there. I would very much like to hear if any member has any record whatsoever of this blue in connection with ants.

Although the Large Blue is the prize par excellence, there are other lepidoptera which are to be found amongst ants, but, here again, I confess I have never found any traces of them, so that the subsequent remarks are not of my own notes, but are again taken from Mr. Donisthorpe. I believe these notes will be of assistance to those meners who feel inclined to tackle the back-aching job of spending hours at a stretch digging up ants nests to find these lepidoptera.

The following list of species falls under the heading of Synaeketes, or indifferently-treated lodgers, and are mostly micro-lepidoptera, and obtain their food by scavenging on the ants' refuse heaps.

*Mymecozela ochraceella* Tgstr. - with *Formica rufa* (Wood Ant), and *F. pratensis* (Meadow Ant). In Britain, it is found solely in Scotland around the Black Wood and Rannoch.

*Tineola biselliella* Hml. - found at Weybridge (25/IX/11) with *F. rufa*.

*Brachmia gerronella* Zell. - With *A. fuliginosus* (The Jet Ant) at Wellington College (27/VII/11). nothing is known of its life-history.

*Amphisatis incongruella* Stn. - South Coast, with *F. pratensis*.

*Endrosis lactella* Schiff. - with *A. fuliginosus*, at Woking (7/V/16).

There is evidently much work, both for the expert as well as the amateur, in this direction. There are many species of moth, chiefly Micro-lepidoptera, whose life-history is still unknown to us, while some species are known to live with ants, although to what extent of reciprocity, it is impossible to say. The initial difficulty lies, I suppose, in the lack of popular interest in ants, for even experienced lepidopterists are often not able to distinguish more than two or three species of ant. The collecting of ants is not quite so romantic as collecting butterflies and moths, but I would very much like to see a few of our members becoming "ant-conscious," because a study of the Formicidae "affords a wider range of study than the lepidoptera, by which I mean that ants provide the student with the problems of social organisations of thousands of component parts, from slave-drivers to harvesters, from anarchists to living honey-pots.

A. N. BRANGHAM.



PLUSIA GAMMA (THE SILVER Y MOTH)

I am much indebted to Captain T. Danreuther and the Insect Immigration Committee of the South Eastern Union of Scientific Societies for permission to reproduce the facts contained herein.

In view of the abundance of this species this season, some notes on its behaviour seem called for.

As has been mentioned before, one of the most striking peculiarities of this species is the fact that it very often migrates in association with the Painted Lady Butterfly (*Vanessa cardui*), and the Rush Veneer Moth (*Nomophila noctuella*). These three lepidoptera have separate and non-allied food-plants, different size, shape and build, and unlike modes of flight. Yet it frequently happens that all three are seen together in the same flight, moving in the same direction and at the same approximate speed. It is very probable, therefore, that they emanate from the same districts, which, as far as Europe is concerned, appear to be in Northern Africa. The species also occurs throughout Asia to China and Japan.

During the past winter not a single record of *Plusia gamma* in any stage was received by the S.E.U.S.S. It seems likely, therefore, that the first of this species met with this year, on May 7th., at both Timoleague, Co. Cork, and Hastings, Sussex, were migrants just arrived from the south. The Silver Y was recorded in very small numbers from time to time over a wide area during the rest of May and June. About the 20th. of that month, however, it appeared in abnormally large numbers all along the south coast, continuing thus for something like ten days, after which numbers rapidly decreased.

The maximum abundance appears to have been reached about June 23rd., on which day the species was recorded as far north as the Isle of Barra, Outer Hebrides, and elsewhere in latitude 57°N in Scotland. It is recorded that the species reached its maximum density in the Isle of Wight round about June 30th., so it seems likely that the migration was in more than one part, or that the later migrants did not travel so far north as their more energetic predecessors.

A third immigration appears to have taken place between August 20th. and 23rd. along the south coast. A thousand were seen on the 23rd. between Rye Harbour and Dungeness on the Sussex border by the Recorder, and also at Deal Kent, the next day. They were noted in hundreds at Bexhill and Eastbourne, but not at Brighton, and Worthing until the 25th. On August 22nd., watching between 8.30 and 10pm., the Curator of Hastings museum, at St. Leonards-on-Sea, saw the migrant swarm arriving on the beach from the south, singly at first, but soon increasing to waves of perhaps a hundred a minute, flying up to 20ft. above the sea, and rising to the illuminations along the parade; here they rested, none continuing to fly inland. By day the insects were found congregated a few hundred yards inland on the flowers in the Warrior Square Gardens, and also in the fields in the neighbourhood, none being on the lights. The swarm, noted first at Hastings on the 20th., increased in numbers from the 22nd. to 26th. Females examined were found to have undeveloped ovaries.

Further west a somewhat different migration of *P. gamma* was observed taking place the next morning. At the Start Lighthouse on August 23rd., 1936, between 9.50 and 11.15pm., an outward migration of 300-400 passed over, all going in a south-westerly direction. These flew much higher than those seen inward-bound at Hastings, being some fifty feet above the lighthouse, itself 200 feet above sea-level. These migrants correspond to those seen, also at the Start Lighthouse, on September 12th., 1934, and again on August 4th., 1935. On the former occasion, thousands passed, going south out to sea, of which 50 rested on the lighthouse glasses. The 1935 emigration started at 1.10am. BST, when hundreds of gammas were observed coming from the north, and proceeding out to sea in a southerly direction. Twenty minutes later the main body came, and their course changed to SSW. There were thousands upon thousands of them; it was just like a fairly heavy snowstorm. Over 300 settled on the lantern glass, and, within a second or two, the



Senior Assistant Keeper had captured over 40 in a cyanide bottle. The migration ceased at 2.35am. A good many captured alive were released after 3am. and also went away to the SSW. The weather at the time was cloudy with a very light northerly wind, dropping to a calm at 2am.; the temperature was 63°F.

On August 30th., 1936, at the same place, a large swarm appeared at 10.30am., settling thickly on plants along the road for 4 miles, They had appeared out of the sky over-head, but when disturbed would move 20 or 30 yards northwards, and not towards the sea. None were seen on the lantern that night, yet they were seen feeding at flowers the next day. At sundown, however, only a few hundreds were left. The weather was calm and sunny, temperature rising to 70°F.

A general southward tendency was noted throughout SW England at this period, but elsewhere, the tendency was still northward.

The origin and destination of these swarms has at present not been traced. We cannot, therefore, say whether the immigrants recorded at the end of August at Hastings were members of an outward migration which had changed its direction en route, or whether it was, as at first would appear, a separate detachment from the Continent. If so, why did they not continue their flight northward inland, as the earlier brood had done? The absence of egg-laying would indicate that they were newly emerged, but this would not be sufficient to differentiate them from the slightly later (because more northern) home-bred generation which was appearing at the same time.

With regard to other species seen in migration with *P. gamma*, very few appear to have been noticed this year. With the June migration recorded a small number of *Macroglossum stellatarum* (Humming-Bird Hawk Moth), *Vanessa cardui* (Painted Lady) *Nomophila noctuella* (Rush Veneer), and a few *Colias croceus* (Clouded Yellow). On the morning preceeding the southward flight at the Start this year, five Painted Lady butterflies and two Clouded Yellows were observed arriving at land, the weather being calm and sunny, the temperature, 65°F.

In the eastern counties great damage has been recorded in the sugar-beet fields. There must have been thousands of acres affected with varying numbers of the larvae. They were most abundant in the fens and marshlands of Lincolnshire, quite abundant around Lincoln and Gainsborough, less abundant in Notts, Leicestershire, Rutland, and south Derbyshire. By the middle of August quite large fields had up to 90% of the leaves showing damage.

Nearly everywhere the Silver Y has been reported as unusually active, flying in the sunshine and feasting on the lossoms of many species of flower. In many places they far outnumbered the local butterflies, so all members must have observations of some kind, it is of special interest that, as reported previously, the species has been taken at sugar. The fact that *gamma* has been common everywhere this season should not deter members from sending records. Any damage to garden or fields crops due to this insect should be mentioned, and even lists of foodplants on which ova or larvae were seen. Cases of definite directional movement, either singly or in groups, are especially desired, and we urge all to forward their observations, however incomplete, to their local recorders. Will members living on or near the south coast please take special note! If you need more cards, you have only to ask us.

B. A. COOPER.

#### IMPORTANT NOTICE.

N. D. Riley, Keeper of Entomology, British Museum (Natural History), Cromwell Road, S.W.7., has sent the following note, that, as a further encouragement to members, other than the thought that their gifts to the Museum would be to the benefit of science in general, the Department of Entomology has large quantities of duplicate insects of all orders, but largely foreign. If desired, they would be only too pleased to let members have these in return for any parasites or larvae. Postage would be refunded, if members request this.

### QUERIES.

No. 23:- Several members have asked whether it is ever possible to hibernate successfully a reasonably percentage of larvae of *Eriogaster rubi* (Fox Moth). All say that in spite of any precaution which they may have taken, practically every larva comes to an untimely end during the winter, whether mild or extra hard. Is it an advantage to have the larvae full-grown early in the season, or are those which continue feeding late just as likely to survive?

### EXCHANGE & WANTED.

Though no lists of exchanges have been received from members for this number, the note appearing on Page 7 from N. D. Riley, Keeper of Entomology, British Museum, is of interest to many, and should not be passed over unnoticed.

We have now definitely ascertained that M. Kenzo Kuwasima, P. O. Box 205, Zamboanga, Midanao, Phillipine islands, is a collector of lepidoptera and the larger coleoptera. Perhaps our collectors of exotic butterflies and beetles will write to him.

Are any members in communication with a Mr. Aspden, Naturalist, of Bangor, N. Wales? If so, we should like to have his address, or hear from him direct with regard to some *V. cardui* (Painted Lady Butterfly) larvae which he has been breeding. -Eds.

E. W. Classey tells us that his *M. athalia* (Heath Fritillary) larvae are now showing signs of preparation for hibernation, though they have attained a length of 3/4 in. He also complains that some, having been fed on cow-wheat (*Melampyrum pratense*), have refused to return to the narrow-leaved plantain (*Plantago lanceolata*) on which they were formerly feeding.

We should be pleased to hear of similar cases among the species becoming addicted to the drug-habit. Here is something for our biochemists to investigate.

We must apologise for an error that crept into page 7 of the last Journal. The food-plant of the Holly Blue, Bladder Senna, should, of course, be *Colutea arborescens* (whence "clewtia") and not the rather widely separated *Cassia* (true senna), as stated.

The Recorder for Cornwall, Charles Nicholson, has kindly pointed out, however, that possibly the blue seen by Mr. Capener was not *Lycanopsis angiolus* (Holly Blue), but *Cosmolyce boeticus* (The Long-Tailed Blue), a rare migrant with which the Holly Blue might possibly be mistaken if not examined at close range. *Colutea arborescens*, Mr. Nicholson states, is the natural food-plant of this butterfly in its home on the Continent, whence it may occasionally stray westwards to Britain. Mr. Capener reports that the egg taken duly hatched, but the larva unfortunately disappeared from the container. We can only suggest, therefore, that some of our energetic breeders should try to induce this butterfly to lay on this plant. If successful, *Colutea arborescens* would no doubt become a regular feature in lepidopterists' gardens.

B. A. C.

### BOOK REVIEWS.

It is proposed that from time to time we review both interesting new entomological publications and the older standard works. Several members have complained of difficulty in obtaining suitable works of reference, and we hope that this section will help to remedy this handicap. We shall be pleased to hear from members concerning any books reviewed or which they think worthy of a review. We shall also be glad to learn the titles of any entomological literature, together with publisher, date, and author, if known. Space permitting, we shall give a short review of one or two books in the next Journal. Incidentally, if there are any members living abroad or in the provinces, who are in the unfortunate position of not always being able to get the book they desire, we shall be glad to order it for them - postage extra. This also holds good for journals and publications, and back-numbers of entomological societies in this country.

NEW MEMBERS

(Unless otherwise requested, the  
titles of male members will, in  
future, be omitted. - EDS.)

- No. 45. Frederick Lemmer 2nd., 39, Park Place, Irvington, New Jersey, U.S.A.  
(Lepidoptera.)
- No. 46. A. J. C. Simpson, 51, Belsize Avenue, London, N. W. 3. (Lepidoptera.)
- No. 47. T. D. Fearnough, 12 Bransby Street, Upperthorpe, Sheffield 6. (Lepidoptera,  
especially lycaenidae, Papilionidae.)
- No. 48. G. Burt, Sunny Cottage, Preston, Weymouth, Dorset. (Lepidoptera.)
- No. 49. J. P. Derriman, 2, Elgin Avenue, London, W. 9. (Lepidoptera.)

RESIGNED

- No. 3. F. Goode, Welford, 275, Eastern Avenue, Ilford, Essex, has tendered his  
resignation.

CHANGE OF ADDRESS

Please note that C. E. Veale has now moved to: 8, Hurst Road, Bexley, Kent.

PRESENT MEMBERSHIP - 47.

The next Journal, No. 13, will appear early in December.

THE JOURNAL OF THE  
ENTOMOLOGICAL EXCHANGE & CORRESPONDENCE CLUB

IN FUTURE TO BE KNOWN AS  
THE ENTOMOLOGISTS' BULLETIN

NO. 13

December 1936

B. A. COOPER,  
61, Okehampton Road,  
LONDON, N. W. 10.

A. N. BRANGHAM,  
160, Haverstock Hill,  
LONDON, N. W. 3.

Dear Fellow members,

Since this is the last Journal that will appear under the name of The Entomological Exchange and Correspondence Club, it is well for us to point out to any who may have doubts on the matter that the club's policy is not to be changed in any way, but will remain precisely the same as hitherto - namely - to aid all amateurs with any kind of interest in entomology, and especially to encourage beginners.

Again, although mention of exchange has, by mutual agreement, been dropped from the title for the sake of conciseness, it must not be thought that this is in any way disapproval by the Editors. On the contrary, it is to be hoped that this activity will greatly increase, and take up, before long, a much larger volume of space in the Journal than hitherto. The quantity of exchange notices received during our first year or so of existence has, on the whole, been rather disappointing, perhaps by reason of their novelty, and we fully anticipate a great improvement during the coming season, especially in the exchange of live insects. It is unwise for those who have not been collecting long to attempt the exchange of set specimens, but most collectors are fortunate enough in obtaining quantities of ova, too large in number to be reared by themselves, but which might be of great value to other members. Those who, on moral grounds, do not approve of the destruction of life for purposes of amusement, can still use the column for the exchange, both of the live animals themselves, and reproductions of them by photograph, drawing, or painting. May our exchange section prosper and increase!

We have in mind a proposal to hide the Journal's faults with a plain cover as a protection against damage by dust or careless handling. We should then be able to allow single copies of the magazine to be sold by dealers in naturalists' sundries - whether this would be a profitable advertisement or not, we cannot say, but it should certainly result in an enlarged circle of those aware of our existence. Another aspect of the suggestion is that the cover might eventual prove a source of revenue to the Club, by reason of its advertising value to dealers and those with goods to sell (exchange notices still being free to members).

May we take the opportunity of reminding members that subscriptions for 1937 become due on January 1st. Those who still have a small amount owing, due to 1936, should do so at the rate of 6d. per Journal received between the expiration of their last subscription and Journal 14. Any donations received will go towards the improvement of the Journal.

We wish you all a very happy Christmas, together with many an excellent find during the coming year,

Yours Sincerely,

B. A. COOPER,  
A. N. BRANGHAM.

GREEN HAIRSTREAK NOTES.

The Green Hairstreak butterfly (*Callophrys rubi*) is to be found in many sheltered spots on the heather moors near Sheffield, but in one locality, on Ramsley moor, it is particularly abundant every year.

For many years I have been puzzled as to which plant was the food of the caterpillar, for, although I have carefully searched for them many times,



I have never succeeded in finding a single specimen.

In order to discover the food-plant in these moorland localities, I undertook the following experiment. Visiting the Ramsley moor locality in late May, 1935, I gathered a few sprigs of leaves of very nearly every common plant I could find, excluding the grasses and the ferns. These included Blackberry, Bilberry, Heather, Dog-rose, Gorse, Violet, Bluebell, and the trees Oak, Birch, and Sallow.

Leaves of these I put in a cage, and with them I placed three female Green Hairstreaks, taken in this locality on the same day. The cage was placed in a sunny position and left undisturbed for a few days. I then took out all of the leaves and examined them very carefully. About a hundred eggs were found, all deposited singly on the sprigs of bilberry, with not a single egg on any other species of plant. I concluded, therefore, that the bilberry was the food-plant of the Green Hairstreak in these moorland districts.

Some of the eggs were deposited on the leaves, others on the stalks, and one ovum was found inside one of the small bell-shaped flowers. The eggs hatched in due course, and the caterpillars were given only bilberry to eat. However, they soon found another food for themselves.

Many of the young larvae disappeared, this minor mystery not being cleared up until I saw one of them eating its brother.

The caterpillars lost their cannibal taste when they were about half-grown, when they quickly fed up, pupating during July. The pupae were stored in a cool stone shed until about the end of November; they were taken indoors then, and placed on an upper shelf in a room which is always warm.

The result was that I had the pleasure of newly emerged Green Hairstreaks at Christmas.

In these moorland localities, specimens are sometimes found which are brown, or nearly so, on the underside, but these are rare. It has been suggested that this may be caused by damp, but I hardly think that this can be the case, at least with these wild specimens. It is true that Green Hairstreaks often turn brown in the relaxing tin, but the green colour returns when dry. (Is this always so? - Eds.)

Specimens, in these localities, which have a complete line of white dots across the underside of the wings, occur occasionally hereabout, but the usual type has this line reduced to a single dot on each hind wing. I have never seen a specimen without a single white dot.

The Green Hairstreak likes to sit on the flowers of the bluebell, and extract the honey; it is also very partial to resting on the damp brown peaty ground.

T. D. FEARNHOUGH.

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#### CURRENT NOTES.

W. E. Dale notes that six A. grossulariata (Magpie moth) (of about twenty taken) pupated about September 20th., of this year.

Three members note having taken C. minus (Small Blue) during August. W. E. Dale mentions a single specimen at Folkestone, Kent (4/8/36) and another at Lewes, Sussex (28/8/36), both in excellent condition. A. L. Capener notes the species as being common among kidney vetch, about August 6th.-10th., 1935.

T. Bainbrigge Fletcher writes as follows:-

"The Lycaena minimus on 8/VIII in Wilts. was unusual, but I think that single examples like that are usually merely late emergences, and not a second brood. It is common here, emerging about June 1st., and usually being over by the end of that month, but this year I saw several (including a very fresh female) on July 8th. I have never seen any second brood here (Stroud, Gloucestershire), even in the hot summers of 1933-1935."

On September 17th., 1936, W. E. Dale found on a telegraph pole in the Bexley, Kent, district, a male Ennomos autumnaria (Large Thorn Moth), a female of the the same species being higher up the pole. The latter unfortunately escaped but the male was in very good condition when taken. Since this species is a very rare immigrant, it seems hardly likely that a pair would thus be found naturally. The probability is that these were escapes from Newman's Butterfly Farm, which is in the same district, not so very far away, where E. autumnaria has been bred regularly for a number of years past.

CURRENT NOTES (Cont.)

Yet another piece of country not far from London and frequented by many entomologists, now has hopes of being saved from destruction by house-builders. A scheme is on foot to preserve 42 acres of the Great Wood of Belfriars, Leigh-on-Sea, as part of a green belt round Southend. The Essex County Council have offered 20% of the purchase price while the Benfleet Council have offered 10%; the rest has yet to be contributed. This wood is the haunt of several rare birds and insects and it is to be hoped that it will be saved to posterity in its present condition - as a sanctuary to those species which it contains, and so not expose them to the possible extermination in a public park.

B. A. C.

In addition to the counties cited by A. N. Brangham on page 5 of Journal 12, as localities in which Lycaena arion (Large Blue butterfly) still occurs, T. Bainbrigge Fletcher states that it is still found in Gloucestershire, though nearly exterminated now. He adds (28/X/1936):-

"Lycaena bellargus (Adonis Blue) was still about last week. In May, by the way, I found a larva of the latter attended by ants!"

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BOOK REVIEWS.

UNDER THE HEAVENS - By H. W. ("Bunny") Austin. Chapman and Hall. 1936. 3/6.

This is just the book for the man whose main entomological interest is not in the amassing of specimens for a collection, but as an aid to discovering the beauties and joys of nature. "Bunny" Austin, so well known as one of the finest lawn-tennis players of today, herein shows another side of his character, although a student of the psychology of lawn-tennis would argue that it is more a projection of his true character, rather than another side of it. While we may not agree with one or two of his lepidopteral comments, it is pleasant to reflect that the study of one branch of science (here biology) may sharpen one's powers of observation and encourage interest in other branches. While many entomologists look down with scorn on the so-called "sentimentality" of "naturalists" it is interesting to note that many well-known biologists (Henri Fabre, Julian Huxley, and Sir Ronald Ross, as examples) have been poets as well as naturalists. Though containing but little of interest to lepidopterists, this lightly written book will please all nature lovers, and we suggest it is worthy of a place in their library.

THE BUTTERFLIES OF THE BRITISH ISLES

THE MOTHS OF THE BRITISH ISLES 2 vols.

7/6. pp. 210 xii. 127 pl.

10/6 each.

VOL. I pp. 356 vi. pl. 159. VOL. II. pp. 389. vii. pl. 159.

by Richard South. Fredk. Warne. 1906. New edn. 1921. New names 1936.

Wayside and Woodland Series.

These books deal with all the British lepidoptera which are commonly termed "macros". Together, often known as the "Lepidopterists' Bible", they form by far the most useful work of identification for the beginner. Each species, in all the stages of its metamorphosis, is briefly, yet amply described, while food-plants, times of appearance, habitat, and distribution in Britain are given to allow of their being searched for in the right places and season. The books also contain short hints on collecting, rearing, setting, and the like, together with very useful notes on the peculiarities of each species. Structure and classification are not entered into as the volumes are intended primarily for natural history students. Though the colourings are occasionally imperfect, and their printing a little blurred, all save very abnormal varieties of British macro-lepidoptera should be easily identifiable with the help of coloured plates and diagrams. Written throughout in simple non-technical language, this is a thoroughly reliable and useful series of books, which should be on the bookshelves of everyone interested in the study of butterflies and moths.

COLLECTING LEPIDOPTERA AT FALMOUTH  
(JULY-AUGUST 1936)

The following notes were made during a fortnights holiday spent in the Falmouth district, S. Cornwall, from July 25th. to August 8th. Weather was not altogether ideal, as on some evenings rain fell incessantly, while on others when a clear sky prevailed, as full moon shone forth to keep the moths at bay. By day rain was frequent, but otherwise, sea breezes were warm and rarely strong.

To anyone who has already amassed a fair collection this list will undoubtedly prove of little interest. But to the beginner it will show what may be achieved without much difficulty merely by collecting regularly over the same area.

As regards butterflies, there appeared to be a general scarcity everywhere. Apart from single specimens of a few migrants, the most interesting observation was the sight of hundreds of *Pieris brassicae* (Large White) on the Lizard coast, flying N.W. from the sea inland. With the aid of fieldglasses they could be seen for a short distance out to sea, flying quite close to the water's surface. On rising over the cliffs they continued to fly inland at about 6 mph, even when the sun was hidden by clouds, although many settled for a short while on thistle and knapweed flowers. The most astonishing part was, however, that of a large number examined, ALL were females.

In woods throughout the district *Pararge aegeria* (Speckled Wood) was common. In addition, near Coverack numbers of *Lycaena aegon* (Silver-studded Blue) were seen in quite good condition.

Every evening from July 28th. to August 6th. trees and posts by the Swan Pool and a very short quay along the cliffs towards Penzance were sugared in a similar manner. The numbers at sugar on successive nights are interesting by reason of the fact that the same posts were sugared each evening. The results therefore appear to be little dependent on prevailing weather conditions. The numbers were as follows:-

1, 3, 8, 18, 49, 79, 150, thereafter being in the three hundreds. Only those present at the first round ar included in the above counts.

The one night with anything of a wind did not appear to differ materially in the numbers of those on the wing from any other night, although, as would be expected, the insects were rather less easily caught. There seemed fewer of the weaker flying geometridae about, however, but this difference may not have been actual. On the other hand, collecting with a net after darkness had completely fallen, seemed on the whole to be aided by a light breeze.

Moonlight had a very marked effect on what lepidoptera there were to be seen. Solely those normally met with as dusk fliers were abroad, though of other species, members both of noctuidae and the geometridae were to be found sitting about on the herbage, and could easily be put up.

During dusk or rain, the noctuidae and larger geometridae were exceptionally active, but the smaller species seemed to have vanished. Occasionally, they were to be found feeding on the nectar of flowers but presumably most of them had taken refuge under leaves and so forth.

Several species of noctuid and geometrid larvae were found at night on willow, bramble and ragwort, irrespective of weather, but owing to an accident in posting home, many of these were never identified, so a list cannot be given.

Of the moths at sugar, by far the greater number were *Hadena didyma* (Common Rustic), and *Hadena polyodon* (Dark Arches). In neither of these were any black specimens met with, as were later found in both London and at Whitby, Yorks. On August 6th., however, 40 specimens of *Gnaphiphora plecta* (Flame Shoulder) came to sugar, and 10 others were taken while "dusking" (that is, netting while on the wing at, or soon after, dusk). During the three previous evenings only 4 were caught while previously none had been seen at all. The evening of the 6th. was warm and cloudy, with practically no wind. The full moon was obscured till late, but the three evenings preceeding this one had been very bright. Specimens varied from very worn to absolutely perfect, but the majority were indifferent. The sudden increase in numbers was hardly attributable to weather conditions, absence of moon, nor sudden emergence as it was not accompanied by a similar happening among any other species. It is possible, therefore, that it may have been caused by a migration, but I have not heard of any such occurrence with this species before.

Ragwort blossom was quite attractive to a few noctuidae, even in bright moonlight, but *Eupatorium* and *Teucrium* flower were not so well attended. Yet it was the latter which produced specimens of *Pyralis glaucinalis*.



The Wainscots had a habit, after their early flight, of settling on the dead flower heads of Phragmites and other grasses growing around the Swan Pool, and of apparently imbibing some kind of sustenance which allowed them to be easily boxed as if slightly "drunk." Perhaps this was due to the recent rains having germinated the grass seeds, the sugars formed, somehow diffusing out into the evening dew and making a palatable drink. Whether this is the actual cause or not, should not be difficult to determine. I know of no other explanation.

Owing to lack of space, only a selection of species can be given, but the following are the more interesting:-

<u>Leucania pallens</u> (Common Wainscot)	<u>Calamia lutos</u> (Large Wainscot)
<u>Leucania impura</u> (Smoky Wainscot)	<u>Coenobia rufa</u> (Rufous Wainscot)
<u>Leucania straminea</u> (Southern Wainscot)	<u>Helethroph</u> <u>leucostigma</u> (Crescent)
<u>Miana literosa</u> (Rosy Minor)	<u>Caradrina alsines</u> (Uncertain)
<u>Miana bicoloria</u> (Cloaked Minor)	<u>Caradrina taraxaci</u> (Rustic)
<u>Noctua rubi</u> (Small Square Spot)	<u>Scoliopteryx libatrix</u> (Herald)
<u>Lithosia lurideola</u> (Common Footman)	<u>Xanthorhoe galiata</u> (Galium Carpet)
<u>Sidemina fissipuncta</u> (Dingy Shears)	
<u>Acidalia dimidiata</u> (Single Dotted Wave)	<u>Hydromena furcata</u> (July Highflyer)
<u>Acidalia marginepuncta</u> (Mullein Wave)	
<u>Acidalia imitaria</u> (Small Blood Vein)	
<u>Ortholitha plumbaria</u> (Lead Belle) Common near Coverack	
<u>Mesoleuca bicolorata</u> (Blue-Bordered Carpet)	<u>Anticlea rubidata</u> (Flame)
<u>Melantheria procellata</u> (Pretty Chalk Carpet)	
<u>Coremia unidentaria</u> (Dark-barred twin-spot Carpet)	
<u>Crocallis elinguar</u> (Scalloped Oak)	<u>Epione apicaria</u> (Bordered Beauty)
	<u>Gnophos obscurata</u> (Annulet)

In North Cornwall males of Lasiocampa rubi (Oak Eggar) were caught mistakenly for Argynnis aglaia (Dark Green Fritillary) which was also flying commonly.

Not one Noctua scarthographa (Square Spot Rustic) was seen or caught, though in both London and Whitby it was a pest at Sugar.

B. A. COOPER.

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#### QUERIES

No. 24. - C. H. Veale asks whether the abele or white poplar (Populus alba) is a suitable food-plant for all poplar-feeding species. Do any members know of lepidoptera which feed on its congeneric relations but do not do well on P. alba, and vice-versa? In addition, how far is it possible to rear sawfly - or willow-feeding species on the various poplars? Sawfly and willow are apt to wilt frequently when placed in water, even if the stems are cut under water, but the poplars do not suffer from this disability to anything like the same extent.

No. 25. - W. E. Dale complains of an extraordinarily high mortality among a brood of Arctia villica (Cream-Spot Tiger) reared by him from the egg. The larvae emerged on August 17th, 1936, and progressed favourably - but only till the early part of September - when they began to die off; by mid-October only about twenty remained, although they were separated into three lots. Neighbours' larvae of this species behaved likewise, but those of Arctia villica (Garden Tiger) remained healthy. Can anyone offer any explanations?

oOo

#### REPLIES TO QUERIES

No. 18. - Are any members of the Sphingidae attracted by light? C. H. Veale points out that J. H. Bell in "Days with a Butterfly Net" records S. ocellatus (Eyed Hawk) and A. atropos (Death's-head Hawk) as being attracted to light. Richard South (Moths of the British Isles I. 1921 Edn pp 44-5) notes H. celerio (Silver-striped Hawk) as being attracted in this manner.



B. A. Cooper notes both S. populi (Poplar Hawk, and S. ocellatus (Eyed Hawk) resting in twos and threes round lights at Cockfosters tube station, Herts. He has also taken C. elenor (Elephant Hawk) beneath mercury-vapour street lamps at Kenton, Mddx.

In the "Entomologist" (Vol XXIII 1890, pp 22) the following sentences appear:- "Colonel Swinhow said that the attractive power of light depended very much on its intensity, and on the height of the light above the ground.

By means of the electric light in May he had collected more than 300 specimens of Sphingidae in one night."

It thus appears, generally speaking, that one may look upon light as a fairly good attractant for Hawk moths. Their swift flight would very often tend to allow them to pass a zone of light of sufficient attractive intensity before the natural phototropic reflex had reached anywhere near its maximum intensity and so the insects would pass on. But the insects' flight-attractive reflex is great enough for these moths to be permanently drawn to very brilliant or diffuse systems of lighting, especially such as are now being used high above main roads and streets. It only remains for a suitable method of "working" these to be devised by some of our ingenious members for light to be made a practical proposition in the capturing of Sphingidae.

B. A. C.

No. 21. - Mrs. Head writes as follows:-

Mr. Head has only once in his long experience had a female moth (C. elenor - Elephant Hawk) pair twice and lay fertile ova after each pairing. If a female pairs more than once (males pair many times), our own experience has been that the female was not properly fertilised. This has happened with worn males, or through disturbance during copulation.

"The common silkworm (Bombyx mori) seems to be the species most remote from natural habits. Domestication, and consequent intensive in-breeding, have destroyed all other activation. It is very prolific and probably needs frequent copulation in order to fertilise all the ova. Maybe close confinement brings about what is very noticeable - namely, that owing to so much pairing, frequent mishaps occur, as, for example, death while still copulated and the laying of few ova through the female being rarely free to deposit them"

To the above, B. A. Cooper makes the following additions:- In late March of this year, I took, among other things at sallow blossom, four copulated pairs, two being T. gothica (Hebrew Character) and the others C. vaccinii (Chestnut); these separated on being disturbed, but, later, all were found recopulated. The "disturbing" factor may be essential - that I cannot tell - hence the words "at least in captivity" in the previous note (Journal 11, page 8.)

No. 22. - Hydriomena miata (Autumn Green Carpet), Dasypolia templi (Brindled Ochre), and perhaps a few other moths mate in the autumn, the males dying after pairing. The females hibernate and in the spring the ova are deposited -Mrs. Head.

Larvae have no sexual organs and cannot produce eggs. Until the insect forms in the pupa it contains mostly liquid. I once argued this very assertion with an indignant man who proudly took steps to supply proof, this consisted of larvae and pupae of Pieris brassicae (Large White) which were infested with minute ichneumon cocoons! - Mrs. Head.

While it is well for members to remember that butterflies and moths normally can only bring forth young in the imago state, the fact remains. however, that larvae and pupae

of certain insects do as a normal procedure reproduce themselves in these stages without undergoing a complete metamorphosis. This strange phenomenon of parthogenesis or virgin reproduction by the immature animal, is not confined solely to the insects, and is known as paedogenesis.

A. D. Imms, in his "General Textbook of Entomology" summarises the facts under the heading 'Paedogenesis', as follows:-

"In a few instances larvae or pupae are capable of parthenogenetic reproduction, and this process which involves the production of young by the immature organism is termed paedogenesis.

"The best known instance of the phenomenon occurs in the Cecidomyrid, Miastor where it was first observed by Wagner in 1862. His remarkable discovery has since been confirmed by a number of observers, the most recent being Kahle (1908) and Hegner (1914). The female fly contains only 4 or 5 very large eggs which attain nearly the full length of the abdomen. Each egg

develops into a correspondingly large transparent larva which produces paedogenetically from about seven to thirty daughter-larvae of similar characters to the parent. After devouring much of the tissue of the latter, the larvae eat their way to the exterior and reproduce by a similar method of their own account. After the process has gone on for several generations male flies are produced. The latter, after fertilisation, give rise to the paedogenetic cycle over again. In Miastor americana Felt, the ovaries lie on either side of the body of the larva in the tenth or eleventh segment; each ovary contains typically 32 oocytes and is enclosed in a thin cellular envelope: as some of the oocytes fail to develop, usually 5-17 embryos are found in the individual larva (Hegner).

"Pupal paedogenesis occurs in the Chironomid Tanytarsus where it was discovered by Grim in 1870, whose observations have been extended by Zavrel. The pupa and also the imagines very shortly after emergence are capable of producing eggs from which the larvae duly emerge. Paedogenesis is also recorded by Barber in larvae of the beetle, Micromaltus!"

No. 23. - A few years ago I reared about a dozen fox moths from some 18 larvae I got on the heath near here. I found them in the autumn and put them in a large vivarium with a few growing heather-plants. The roof was perforated zinc, with half the east and west sides of the same material. About the end of October I cut a quantity of heather and laid it inside amongst which the nearly full-grown larvae hid. In the spring, they spun up, and duly emerged. What fatalities there were, I think, were largely due to parasites. I left them alone and as near as I could to their natural conditions, with no protection from the elements, other than that afforded by the glass and zinc of the vivarium.

A. L. Capener.

No. 25. - The only explanation I can offer is that the larvae suffered from lack of sunshine, due possibly to the weather conditions. I have noticed that, during March and later when the weather begins to get warm, the larvae commence to wander about in search of a spot in which to sun themselves. All my brood which were completely deprived of direct sunlight had died by mid-April. Those almost dead, which were placed in the sun, soon recovered. On mild nights, from October to March, the larvae came out to feed, but, although they saw not a direct ray of sun-light, during this period, all remained healthy. It would offer therefore, that sunlight is only a necessity during the warm weather. Other notes solicited.

B. A. C.

#### EXCHANGE AND WANTED

T. D. Fearnough, 12, Bransby Street, Upperthorpe, Sheffield 6, desires the loan of numerous species of Papilio (Swallow-tail Butterfly). Single specimens for the purpose of making painted reproductions are welcome, and will be returned in a very short time.

In return, he will be pleased, on receipt of 'Wanted' lists, to give all the help he can. He has many fine duplicates of British Butterflies and Moths.

H. Takenaka (No. 51) collects curious butterflies and beetles, especially may-beetles, Chrysomelae elegans and stag-beetles. He would like to have correspondence with other members on these subjects.

J. Walker (No. 22) will exchange foreign bird-skins, humming birds, and kingfishers for foreign stamps, or exotic butterflies and beetles.

T. Bainbrigge Fletcher (No. 52) has duplicates of various "micros" including numerous Pselophorus brachydactylus. Correspondence invited.

A. Kennedy (No. 20) has for exchange a few specimens of C. croceus (Clouded Yellow), A. aglaia (Dark Green Fritillary), L. quercus (Oak Eggar) and pupae of M. pisi (Broom Moth). Also other Noctuae. In addition, he will be pleased to send a few cocoons of L. quercus var. callunae (Northern Eggar) to any member who has not this specimen in his collection. He would like a few specimens of N. io (Peacock) and C. nupta (Red Underwing). Exchange is desired, but he hopes members will not refrain from asking because they have not got the species desired in return.

Fredk. Lemmer 2nd (No. 45) would be glad to hear from members wishing to exchange Lepidoptera.

W. E. Dale has for exchange pupae of M. tiliae (Lime Hawk Moth). Wants - numerous species.

A. Smith of York, also collects land, freshwater, and marine shells, and would be pleased to hear if there are any other kindred conchologists in the Society.

G. S. Greig has for exchange larvae of L. quercus var callunae (Northern Eggar), and E. rubi (Fox Moth); also set specimens of B. trifolii (Grass Eggar) and others. He wishes to obtain pupae of various Sphingidae.

D. O. Boyd (No. 54) states that he is always glad to hear from fellow collectors of bees and wasps, and very kindly offers to give any help he can in the determination of species, etc.

#### MEMBERSHIP CHANGES.

##### NEW MEMBERS

- No. 50; D. J. Billes, "Percuil", Cliff End, Purley, Surrey. (The Breeding of Ants.)  
No. 51; H. Takenaka, c/o Matsukawa, 34, Nipponbashi, 4-chome, Osaka, Japan. (Coleoptera.)  
No. 52; T. Bainbrigge Fletcher, R.N., F.R.E.S., F.Z.S., F.L.S., Rodborough Fort, Stroud, Glos. (Micros, especially Plumes.)  
No. 53; E. T. Daniels, 31, Market Place, Norwich, Norfolk.  
No. 54; D. O. Boyd, West Clandon Rectory, Guildford, Surrey. (Hymenoptera aculeata.)  
No. 55; Edwin J. Jones, Headmaster, The County School, Stourport-on-Severn, Worcestershire.  
No. 56; Miss N. Edgar, 3, Craven Terrace, London, W. 2. (All orders lepidoptera.)  
No. 57; H. M. Millar, 40A, Rapson Road, Durban, Natal, South Africa.

##### CHANGE OF ADDRESS

- No. 1; L. R. Tesch, to c/o Mrs. Marlow, Park Farm, Steppingley, Bedfordshire.  
No. 18; A. N. Brangham, to 160, Haverstock Hill, London, N. W. 3.

##### RESIGNED

- No. 18; A. C. Hewitt, 9, Newbury Road, Higham Park, London, E. 4.

Letters to this member have been returned by the GPO marked "Not known at this address!" Should anyone be able to throw any light on this member's whereabouts, we shall be pleased to hear from him. - EDS.

##### ERRATA

- page 3, Book Reviews, "The Moths of the British Isles" "New Names 1936" should refer to "The Butterflies of the British Isles"  
page 4, line 27, "Penzance" should read "Pennance!"  
page 5, middle, Collecting Lepidoptera at Falmouth: Last line but one should read "Only one Noctua XANTHOGRAPH A....."

OWING TO MR. BRANGHAM'S CHANGE OF ADDRESS, THE EDITORS ARE NO LONGER IN POSSESSION OF A TYPEWRITER WITH WHICH TO TYPE THE JOURNAL. THEY WOULD BE INDEBTED TO ANY MEMBER WHO MIGHT VOLUNTEER TO CONTINUE WITH THIS WORK, OR ELSE, WHO COULD GIVE THEM INFORMATION AS TO WHERE IT MAY BE DONE WITH THE MINIMUM AMOUNT OF EXPENSE. FAILING THIS, THE JOURNAL MAY HAVE TO BE INTERRUPTED FOR SOME TIME. - EDS.

THE AMATEUR ENTOMOLOGISTS SOCIETY

MEMBERSHIP LIST

DECEMBER 1936

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Hon. Secretaries and Editors:-

B. A. Cooper, 61 Okehampton Road, London, N. W. 10. (Lepidoptera, General Entomology. )

A. N. Brangham, 160, Haverstock Hill, London N. W. 3. (British Ants. ) Other members: (Numbers denote order of joining)

1. L. R. Tesch, c/o Mrs. Marlow, Park Farm, Steppingley, Bedfordshire. (Lepidoptera.)
2. A. Glanfield, Devoncote, Darlington Road, Hartburn, Stockton-on-Tees, Durham. (Lepidoptera, British and Foreign.)
4. B. V. Fox, Beam Wireless Station, North Pethererton, Bridgewater, Somerset. (Lepidoptera.)
5. W. Wood, Ayton, Berwickshire.
6. A. Capener, The Limit, Osmington, Weymouth, Dorset. (Lepidoptera.)
7. K. Clarke, 7, Stanley Avenue, Wembley, Mddx. (General Entomology.)
10. G. D. S. Greig, Medwyn, 65, Cavendish Drive, Rock Ferry, Cheshire. (Lepidoptera.)
11. A. E. Teschmaker, Ringmore, Teignmouth, Devon. (Lepidoptera.)
12. M. A. Rollason, Valetta, Ladye Bay, Clevedon, Somerset. (Lepidoptera.)
13. F. J. Clarke, Gowdhurst, Chart Lane, Dorking, Surrey. (Lepidoptera.)
14. H. G. B. Yates, 37, Sherman Road, Reading, Berks. (Lepidoptera.)
15. Messrs. H. Head & Co., Entomologists, Burniston, Scarborough, Yorks.
16. V. G. Cavill, 4, Lawford Street, Bristol.
17. G. E. Hodgson, Lindale, 38, St. Ann's Drive, St. Michael's Lane, Leeds 4, Yorks. (Lepidoptera and Insect photography.)
20. A. Kennedy, 152, Lea Farm Road, Kirkstall, Leeds 5, Yorks. (Lepidoptera.)
21. C. W. Henderson, Brockley, Knightsthorpe Road, Loughborough, Leicestershire. (Coleoptera.)
22. J. Walker, 7, Mount Hermon Road, Windsor Road, Torquay, Devon. (Lepidoptera, British and Exotic.)
23. A. Smith, 23, First Avenue, Heworth, York. (Lepidoptera, including the "micros," shells of Mollusca.)
24. G. B. Walsh, B.Sc., M.S.B.E., Linthorpe, Stepney Drive, Scarborough, Yorks. (Coleoptera, Lepidoptera, Hemiptera.)
27. F. E. Briden, 40, Oldway Road, Paignton, Devon.
28. N. C. Pilleau, Lausanne, Kings road, Horsham, Sussex. (Lepidoptera - butterflies only.)
29. G. V. Day, Deysholme, Runcion Holme, King's Lynn, Norfolk. (Lepidoptera.)
30. K. Kato. c/o Matsuo-Kogyo-Kaisha, Iwate-gun, Iwate-ken, Japan. (All orders.)
31. C. H. Veale, 8, Hurst Road, Bexley, Kent. (Lepidoptera.)
32. H. Dodds, 4, Mansfield Square, Hawick, Roxburghshire, Scotland. (Lepidoptera.)
33. G. Nicholson, Rosedale, 24, Nuns Moor Crescent, Newcastle-on-Tyne, (Lepidoptera.)
34. H. Yamamoto, Matsuo-Kozan, Iwate-gun, Iwateken, Japan. (Coleoptera.)
35. M. C. McLeod, F.R.E.S., Woolton Lodge, Woolton Hill, Newbury, Berks. (Lepidoptera.)
36. D. Tozer, 80, Sparkenhoe Street, Leicester. (Lepidoptera, Coleoptera.)
37. A. Pickett, 6, Chiswick Place, Eastbourne, Sussex. (Lepidoptera.)
38. Fumikiko Yano, 1178/2. Mukogacka, Uenoshiba, near Osaka City, Japan.
39. A. Pow, 19, Wyndham Road, Ardbeg, Rothesay, Bute, Scotland. (Lepidoptera.)



-10-  
LIST OF MEMBERS  
(Cont:)

- 40 Eng. Capt. S. T. Stidston, R.N., F.R.E.S., Aske house, Ashburton, Devon. (Lepidoptera, including the Plume Moths.)
41. E. W. Classey, 141, Portnall Road, London, W.9. (Lepidoptera.)
42. W. E. Dale, 54, Baldwyns Park, Bexley, Kent. (Lepidoptera.)
43. K. Kuwasima, P.O. Box 205, Zamboange, Mindanao, Phillipine Islands. (Lepidoptera, and large Coleoptera.)
44. J. P. Robson, 10, Vane Road, Barnard Castle, County Durham. (Lepidoptera, including "micros.")
45. Frederick Lemmer 2nd., 39, Park Place, Irvington, New Jersey, U.S.A. (Lepidoptera.)
46. A. J. C. Simpson, 51, Belsize Avenue, London, N.W.3. (Lepidoptera.)
47. T. D. Fearnough, 12, Bransley Street, Upperthorpe, Sheffield 6. (Lepidoptera.)
48. G. Burt, Sunny Cottage, Preston, Weymouth, Dorset. (Lepidoptera.)
49. J. P. Derriman, 2, Elgin Avenue, London, London, W.9. (Lepidoptera.)
50. D. J. Billes, 17, Cliff End, Purley, Surrey. (Ants.)
51. H. Takenaka, c/o Matsukawa, 34, Nipponbashi, 4 - chome, Osaka, Japan. (Coleoptera, lepidoptera.)
52. T. Bainbrigg Fletcher, R.N., F.R.E.S., F.Z.S., Rodborough Fort, Stroud, Gloucestershire. (Lepidoptera, Micros, especially the Plumes.)
53. E. T. Daniels, 31, Market Place, Norwich, Norfolk. (Odonata, Heteroptera, General Entomology.)
54. D. O. Boyd, M.S.B.E., West Clandon Rectory, Guildford, Surrey. (Hymenoptera-aculeata.)
55. E. J. Jones, Headmaster, County Senior School, Stourport-on-Severn, Worcestershire. (Lepidoptera.)
56. Miss N. Edgar, 3, Craven Terrace, London, W.2. (General Entomology.)
57. H. M. Millar, 40A, Rapson Road, Durban, Natal, South Africa.

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The Editors will be pleased to hear of any corrections members wish to make to this list.

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JOURNALISTIC ENTOMOLOGY

A. Glanfield has kindly sent us the following cutting, taken from a certain northern newspaper, not so much, we suspect, out of its intrinsic interest, but more as a warning to us as Editors of a responsible Journal! (Eds.)

"Last week a Convolvulus Hawk moth was found in the precincts of Penrith gasworks. Draggled and travel-stained though it was, the beauty of the moth was still apparent. It was a female with a wingspread of nearly three inches of delicate greys, browns, and blacks, and a shapely body banded with alternate curves of pink and black. But the beauty of the moth was transcended by the mystery of its being. Had it been a male the mystery would have been less. because Nature reckes little of the males, once they have done their appointed task and impregnated the females. Throughout nature the same law applies, that the female must be protected as the founder of future generations and the male may perish for all he matters as a useless encumbrance once the female is assured of her future rights. By what unchancy fate had this Penrith moth been urged to fly overseas to a land where the eggs that still remained within her would never achieve their destiny? We shall never know, and perhaps it is as well, for romance is apt to wither in the dire and searching flame of science, for it is ever the unknown that appeals, and in that battered Convolvulus Hawk moth lies an unfathomed mystery that defies detection." (N.B. All matter published does not necessarily voice the opinion of the editors !)

## INDEX

The references are to the new foliation added to this edition which is to the side at the bottom of the pages. The originals are all centred and restart with each number. All the main CAPITALIZED headings of the originals are given, but members names only when they occur in the text. For the names of others refer to lists of members. Insect names are only given when they form the main item of an article or note.

### CONTENTS INDEX

Introduction 3  
Journal :  
  No 1, 7  
  No 2, 11  
  No 3, 16  
  No 4, 21  
  No 5, 24  
  No 6, 28  
Supplement to No 6, 35  
  No 7, 36  
  No 8, 41  
  No 9, 51  
  No 10, 59  
Letter to Members 67  
Ballot paper 68  
  No 11, 69  
  No 12, 81  
  No 12A, 89  
  No 13, 90

### SUBJECT INDEX

ADDENDUM 27, 41, 49, 57, 58  
AMATEUR ENTOMOLOGISTS' SOCIETY 71, 83  
A. N. B. 64, 72, 76  
ANSWERS :  
(See also REPLIES)  
  To No 4, 14,  
  To No 5, 14, 18, 20,  
  To No 9, 26  
  To No 10, 25  
ANSWERS TO QUERIES :  
  To No 19, 76  
  To No 20, 76  
  To No 21, 76  
  To No 22, 77  
ANTS 83  
Austin 92  
B. A. C. 62, 63, 72, 76, 79, 91, 95, 96  
BALLOT PAPER 68  
BALLOT-FINAL FIGURES 82  
BALLOT-PRELIMINARY REPORT 70  
basis of exchange 21, 24, 28  
Bellfairs wood 92  
Bennett 26

Blackman 19, 27, 31, 32, 33  
BOMBYX TRIFOLII 62  
BOOK REVIEWS 88, 92  
Boyd 97  
Brangham 19, 38, 59, 60, 64, 67, 69,  
  81, 83, 85, 90  
Briden 38, 70, 71  
Bushby 57  
cages 39, 40, 42  
CALENDAR 78  
cannibalism 9, 13  
Capener 10, 14, 27, 41, 70, 71, 75, 76, 77, 78  
CELASTRINA ARGOLUS 75  
CHANGE OF ADDRESS 49, 80, 89, 97  
Chitty 43  
Clarke K. 54, 55, 61, 75  
Classey 79, 88  
COLLECTING AT FALMOUTH 93  
Colpomeria quadrisculpta 77  
Conclusions 83  
Cooper 44, 48, 53, 54, 59, 60, 61, 64, 67, 69,  
  75, 76, 77, 79, 80, 81, 83, 87, 90, 94, 95  
CORRECTION 27  
CURRENT NOTES 79, 91, 92  
Dale 76, 78, 91, 94, 97  
Dannreuther 79, 86  
Dealers list 15, back cover  
decline in collecting 12  
Devon 13, 30  
dominula 52  
Ed(itor)(s) 38, 45, 47, 63, 64, 99  
EDITORIAL 69  
Editorial note 30, 39  
emigration 13  
ENTOMOLOGISTS BULLETIN 82, 83  
ERRATA 80, 97  
EXCHANGE & WANTED 10, 18, 23, 40, 48,  
  56, 64, 80, 88, 96  
EXCHANGE 14, 26, 33, 90  
FALMOUTH LEPIDOPTERA 93  
Fearnhough 91, 96  
forcing 13, 77  
Foreign section 60  
Fox 10, 55  
Frohawk 57  
Glanfield 10, 15, 45, 99  
Grass egg 62  
GREEN HAIRSTREAK 90  
Greig 18, 54, 58, 62, 64, 71, 80, 97  
Hawaii 19, 31  
Head 37, 71, 80, 95  
Head Mrs. 37, 57, 95  
HIBERNATION 37, 26, 57  
hippocastanaria 44  
H. M. B. 38  
Hodgson 19  
HOLLY BLUE FOODPLANT 75  
Horse chestnut moth 44  
immigration 22, 63, 86

IMPORTANT NOTICE 79, 87  
 fertility 76  
 CRINALISTIC ENTOMOLOGY 99  
 do 35, 55, 56  
 edney 23, 37, 45, 49, 50, 70, 97  
 erich 77  
 ling 33  
 lasima 88  
 WE DISTRICT 78  
 eva collecting 78  
 eva preserving 45-47  
 eva rearing 39, 40, 42  
 mer 97  
 IDOPTERA & BRITISH ANTS 83  
 IDOPTERA AT FALMOUTH 93  
 ht traps 20, 45, 50, 53  
 ht 9, 18, 23, 25, 39, 53, 54  
 T OF MEMBERS 10, 14, 19, 23, 33,  
 3, 35, 41, 49, 56, 65, 98  
 R. T. 30  
 eod 48  
 BER RESIGNED 80  
 BERSHIP CHANGES 97  
 BERSHIP LIST 98  
 rick 44  
 RANT LEPIDOPTERA 72, 75  
 RATION OF INSECTS 61  
 ration study 55  
 ration 86  
 es 16  
 ch trap 50  
 alis 52  
 MEMBERS 80, 89, 97  
 holson 70  
 ES 8, 12, 15, 16, 22, 28, 37, 42, 52  
 odogenesis 95  
 kett 49  
 leau 47  
 s 33  
 SIA GAMMA 75, 86  
 cting insects 17, 24  
 SENT MEMBERSHIP 80, 89  
 serving larvae 45-47  
 varium 12  
 RIES :  
 1 fertility 9  
 2 annabalism 9  
 3 mortality 9  
 4 ages 9  
 5 light traps 9  
 6 lead pupae 14  
 7 eeding larvae 14  
 8 onvolvulus 14  
 9 hibernation 18  
 1 light 23  
 1 cages 25  
 1 killing 33

13 leaf insects 33  
 14 condensation 40  
 15 ova 40  
 16 atropos 55  
 17 Isle of Wight 55  
 18 light 56  
 19 feeding butterflies 64  
 20 coleoptera 64  
 21 infertile eggs 76  
 22 forcing 77  
 23 hibernation 88  
 24 foodplants 94  
 25 mortality 94  
 re-colonisation 52-53  
 Rearing cages 37, 39, 42, 48  
 RED ADMIRALS 37, 29, 57  
 relaxing 17  
 REPLIES :  
 (See also ANSWERS)  
 To No 7, 47  
 To No 15, 47, 48  
 To No 14, 48  
 REPLIES TO QUERIES :  
 To No 18, 94  
 To No 21, 95  
 To No 22, 95  
 RESIGNED 89, 97  
 Riley 79, 97, 88  
 Rollason 37, 40, 45, 47, 71  
 Rourke 57  
 setting 12, 17, 43  
 SILVER Y MOTH 13, 61, 75, 86  
 Smith 40, 97  
 South 92  
 SPIDER PARASITE 77  
 Stidston 58, 70, 71, 72, 80  
 subscriptions 7, 11, 35, 51, 69, 70  
 sugaring 37  
 supplement to 35  
 SUPPLEMENTARY 41  
 SWARM OF LARVAE 78  
 Takenaka 96  
 Tesch 8, 11, 16, 22, 25, 28, 35,  
 36, 42, 51, 59, 60, 70, 71  
 Teschmaker 14, 29, 37, 57  
 Torquay lepidoptera 30, 38  
 Veale 94  
 Walker 30, 31, 38, 39, 48, 52, 96  
 Walsh 33, 43, 48  
 WET SUMMER 63  
 Weymouth 8, 13, 18, 75  
 Wingprints 26, 27, 41  
 Wise 40, 56  
 Wood 10, 38  
 Yamamoto 49  
 Yates 49

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 60, each.  
 A. 25 Rare Moths, all different (named) 2/6.  
 B 50 ditto, 4/6.  
 C 50 Assorted Butterflies, 2/6.  
 D 100 Assorted Butterflies, 3/6.  
 E 25 Large Showy Moths (Chimera, etc.) 1/6.  
 A and B sent named, others if required named will be at rate of 1/6 per 100 extra.

**Female.**—Scutellum light (very variegated).  
 60, each.  
 A. 25 Rare Moths, all different (named) 2/6.  
 B 50 ditto, 4/6.  
 C 50 Assorted Butterflies, 2/6.  
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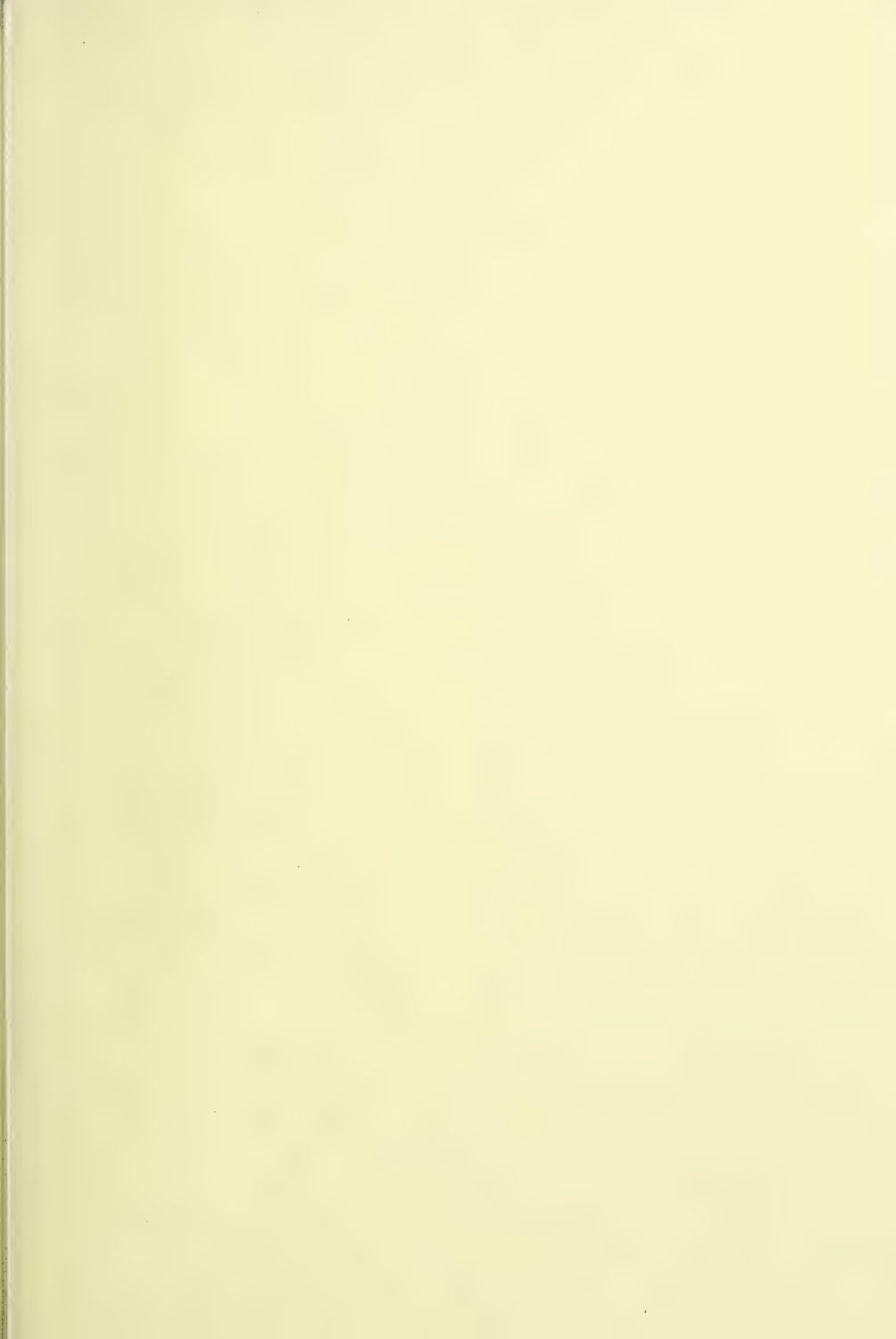














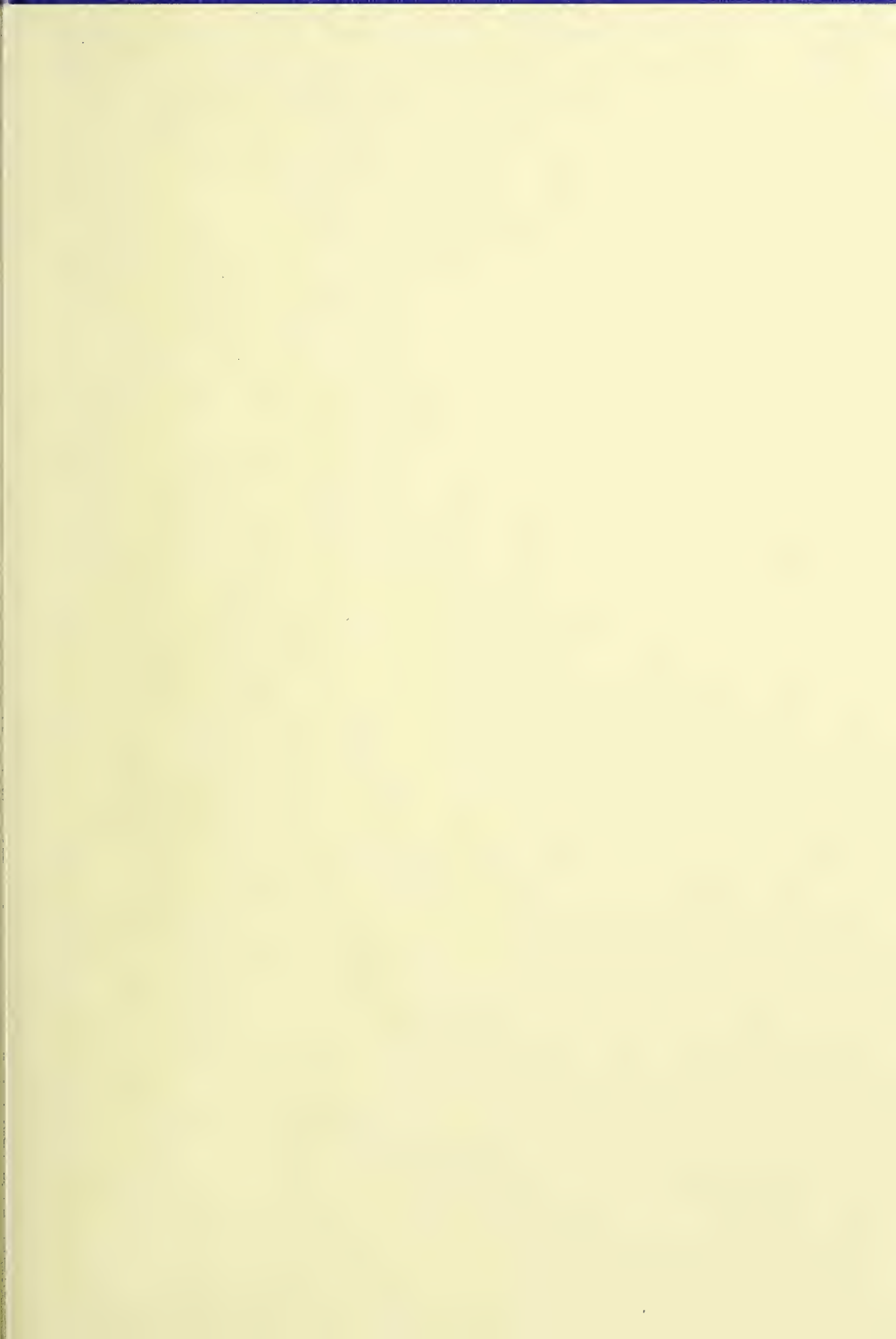












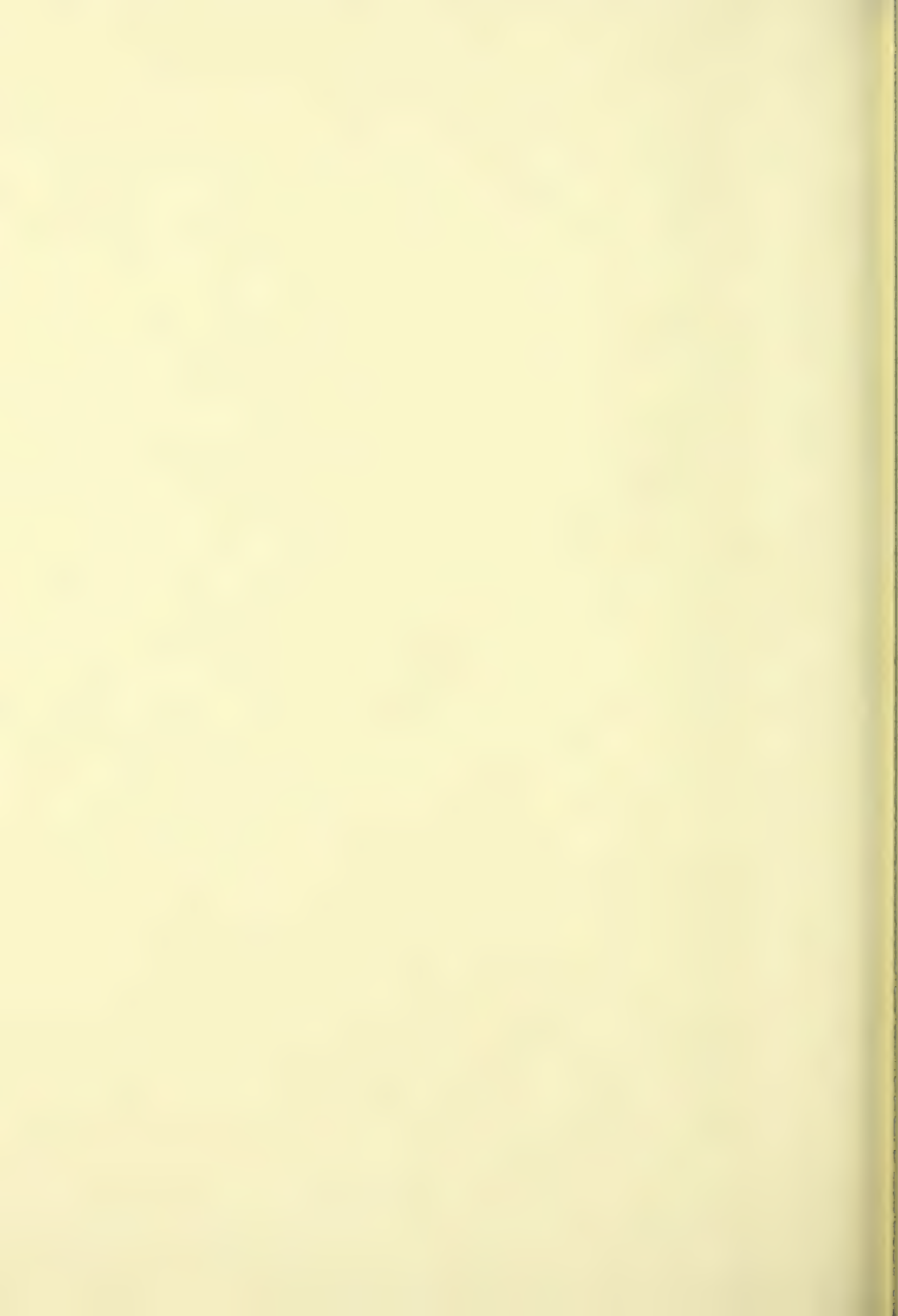










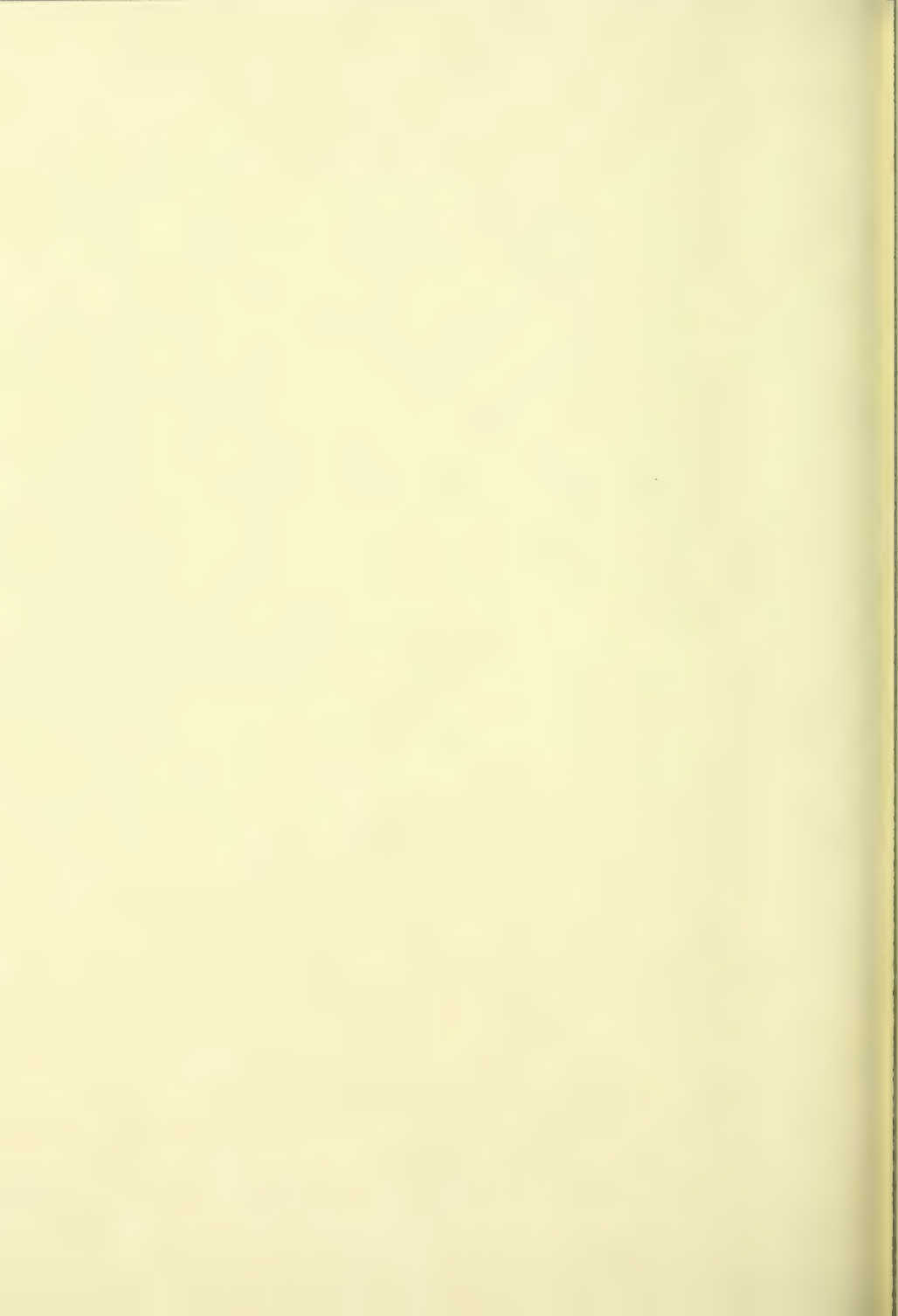














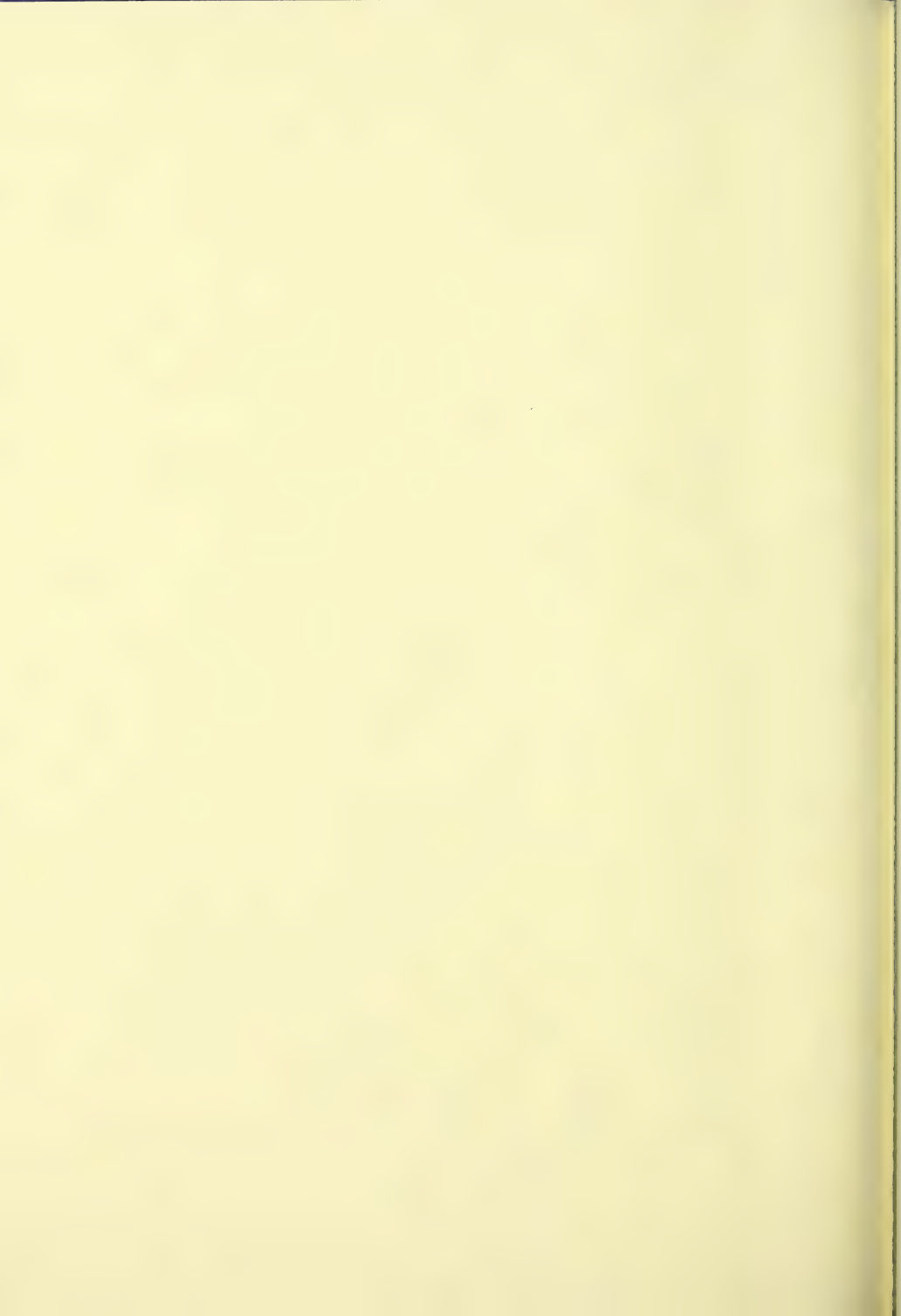




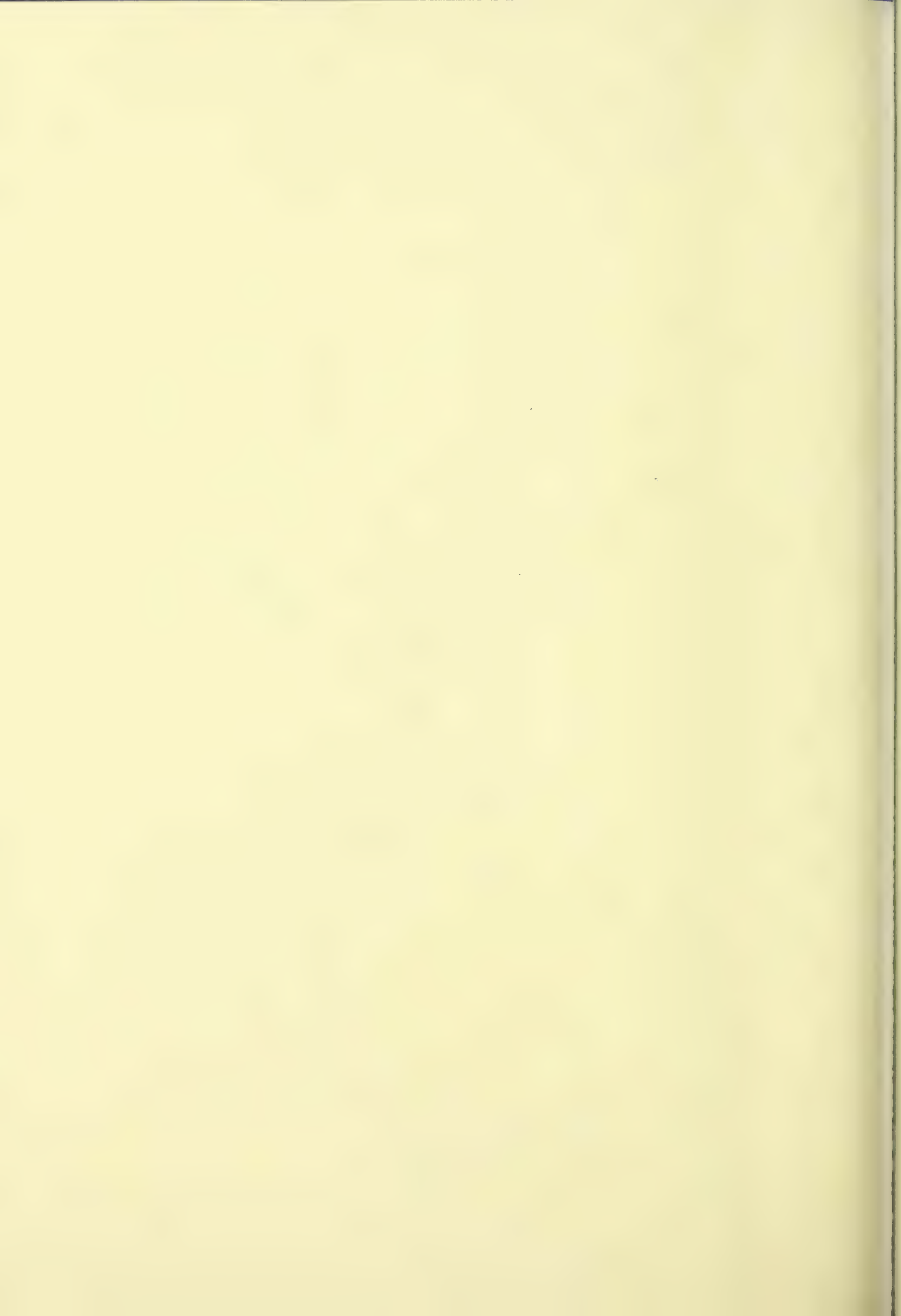


















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